IEEE ISIT 2025

2025 IEEE INTERNATIONAL SYMPOSIUM ON INFORMATION THEORY

SYMPOSIUM PROGRAM

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Welcome to IEEE ISIT 2025 in Ann Arbor

IEEE International Symposium on Information Theory (ISIT) is the flagship symposium of the IEEE Information Theory Society. It has been 75 years since the first ISIT was held in 1950 in London, England. We would like to invite you to the following events:

- An exceptional technical program
- Four tutorials on timely topics toward educating the community
- Two satellite workshops with the objective of expanding the information theory community
- Wireless Wanderlust competition
- Quantum Hackathon

This year, the Shannon Lecture is delivered by Professor Peter Shor, titled "Quantum error correcting codes and quantum channel capacities". We are also pleased to present you with the plenary talks program. Nilanjana Datta will educate us about "Quantum entropies in one-shot information theory and beyond". Alexander Rakhlin will discuss "On the Foundations of Interactive Decision Making". Eva Tardos will tell us about "Learning in Strategic Queuing". En-Hui Yang will teach us about "Information Theory Inspired Deep Learning".

The symposium technical program will be complemented by the following social programs: Alumni in Industry, WhitITS and networking, Meet the Shannon Lecturer and Mentoring and Outreach.

This year, we have worked toward creating an outstanding symposium while making it affordable to our research and student community. This has been made possible by hosting the symposium in the campus of the University of Michigan. We thank the support received from the University in this regard.

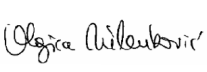
We would like to thank the dedication and tireless efforts of the Organizing Committee. The Technical Program Committee (TPC) has put together an outstanding technical program for the symposium. We wish to thank all the members of the TPC and the co-chairs Achilleas Anastasopoulos, Vincent Tan, Michele Wigger, and Mark Wilde for their efforts in organizing the review process, and creating the technical program. The tutorial co-chairs Natasha Devroye and Dongning Guo have organized four excellent tutorials for the symposium. The workshop co-chairs Jayadev Acharya and Mohsen Heidari have worked toward organizing two excellent satellite workshops. The student travel committee chaired by Onur Gunlu, Shailleshh Venkatakrishnan and Farhad Shirani has coordinated the student travel grants. The sponsorship committee, chaired by Hessam Mahdavifar and Alex Sprintson, has worked toward getting sponsorship from our industrial partners. The recent results program was organized by the Recent results committee chaired by Abram Magner and Ilan Shomorony. We thankfully acknowledge the efforts by Stefano Rini, Luca Barletta, Farhad Shirani and Aamir Sohail for organizing the competition and the hackathon. We thankfully acknowledge the efforts by the Finance committee, chaired by Vijay Subramanian and Aaron Wagner, and the treasurer Lalitha Vadlamani for keeping the finances in order. We thankfully acknowledge the efforts of our outstanding webmasters Onur Gunlu and Christian Senger for organizing and presenting the information about the symposium to the community. We thankfully acknowledge the efforts by the publication committee, chaired by Jun Chen and Victoria Kostina, for coordinating the publication of the papers, and the publicity chair Antonia Wachter Zeh for handling the social media.

We would like to thank the IEEE Information Theory Society for standing behind us in every step of the way. We would like to thank Conference Catalysts for their constant support toward paper handling, publications and sponsorships. We thank Alexis Wisdom and Christopher Dyer for their efforts. The local arrangements in Ann Arbor are coordinated by Conference and Event Services (CES) of the University of Michigan. These efforts are spearheaded by Susan Schaefgen and Ann Stals. We thank them for their services.

We are grateful to our sponsors for their generous financial and in-kind support. We thank Nokia Bell Labs, Qualcomm, the University of Michigan, and Google for the sponsorships. We thank the support from our publishers Cambridge University Press and MDPI.

We are grateful to the financial support from the National Science Foundation, USA and the Army Research Office, USA in the form of student travel grants. We are grateful to the student travel grants received from the IEEE Information Theory Society.

We wish you a productive and enlightening experience in ISIT 2025 and in Ann Arbor.



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Sunday June 22, 2025	Monday June 23, 2025		Tuesday June 24, 2025			Wednesday June 25, 2025	Thursday June 26, 2025			Friday June 27, 2025	
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AM Tutorials Part I 08:30 - 10:00	Moving Break 09:35 - 09:50		Moving Break 09:35 - 09:50			Moving Break 09:35 - 09:50	Moving Break 09:35 - 09:50			Moving Break 09:35 - 09:50	
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AM Tutorials Part II 10:30 - 12:00	Session MO2 11:30 - 12:50	Student Paper Awards II 11:30 - 12:50		Session TU2 11:30 - 12:50		Session WE2 11:30 - 12:50		Session TH2 11:30 - 12:50		Session FR2 11:30 - 12:50	
Lunch 12:00 - 13:30	Lunch 12:50 - 14:30	Alumni Relations 13:00 - 14:20		Lunch 12:50 - 14:30	With-ITS Event 13:00 - 14:20	Hack-a-thon 13:00 - 18:00		Lunch 12:50 - 14:30	Meet the Shannon Lecturer 13:00 - 14:20	Lunch 12:50 - 14:30	Mentoring & Outreach 13:00 - 14:20
PM Tutorials Part I 13:30 - 15:00	Session MO3 14:30 - 15:50	Recent Results Poster Session 14:30 - 15:50		Session TU3 14:30 - 15:50				Session TH3 14:30 - 15:50		Session FR3 14:30 - 15:50	
Coffee Break 15:00 - 15:30	Coffee Break 15:50 - 16:10			Coffee Break 15:50 - 16:10				Coffee Break 15:50 - 16:10		Coffee Break 15:50 - 16:10	
PM Tutorials Part II 15:30 - 17:00	Session MO4 16:10 - 17:30	D2I Competition Showcase 16:10 - 17:30		Session TU4 16:10 - 17:30				Session TH4 16:10 - 17:30		Session FR4 16:10 - 17:30	
Welcome Reception 17:30 - 21:00				Moving Break 17:30 - 17:45				Banquet 17:30 - 21:30			
				Award Session 17:45 - 18:45							
				Award Reception 18:45 - 20:45							

ISIT JUNE 22-27 ANN ARBOR MICHIGAN

Shannon Lecturer

Peter Shor, Massachusetts Institute of Technology, USA

“Quantum Error Correcting Codes and Quantum Channel Capacities”

Abstract: Often, when quantum mechanics is introduced into a theory, the theory changes radically. This happens with quantum information theory. We will discuss quantum error correcting codes and quantum channel capacities. While there is essentially only one classical capacity, there are many different quantum capacities, and they do not behave as nicely as classical capacity. Quantum error correcting codes must satisfy more constraints than classical ones, which means they are quite a bit harder to construct. We still don't have efficient quantum error correcting codes that asymptotically approach the quantum capacity. We will discuss some of the parallels and the differences between classical and quantum information theory.

Bio: Peter Shor is Morss Professor of Applied Mathematics since 2003. He received the B.A. in mathematics from Caltech in 1981, and the Ph.D. in applied mathematics from MIT in 1985, under the direction of Tom Leighton. Following a postdoctoral fellowship at MSRI, he joined AT\&T. He was a member of its Research staff, 1986-2003. He joined the MIT faculty in applied mathematics as full professor in 2003. Professor Shor's research interests are in theoretical computer science: currently on algorithms, quantum computing, computational geometry and combinatorics. In 1998, Peter Shor received the Nevanlinna Prize and the International Quantum Communication Award. He also received the Dickson Prize in Science from Carnegie-Mellon in 1998. He was awarded the Gödel Prize of the ACM and a MacArthur Foundation Fellowship in 1999. He received the King Faisal International Prize in Science in 2002, and was named one of Caltech's Distinguished Alumni in 2007. He is a member of the National Academy of Science (2002), and fellow of the American Academy of Arts and Sciences (2011). In 2017, Professor Shor received the Dirac Medal of the International Centre for Theoretical Physics. He also received the 2017 IEEE Information Theory Society Paper Award, jointly with Charles Bennett, Igor Devetak, Aram Harrow, and Andreas Winter for the paper "The Quantum Reverse Shannon Theorem and Resource Tradeoffs for Simulating Quantum Channels" which appeared in the IEEE Transactions on Information Theory, vol. 60, no. 5, pp. 2926–2959, May 2014. In 2018, Shor received the IEEE Eric E. Sumner Award, for Outstanding Contributions to Communications Technology. He also received the 2018 Micius Quantum Prize in April 2019. In May 2022, Shor was named the recipient of MIT's 2022-2023 James R. Killian Jr. Faculty Achievement Award, the highest honor the Institute faculty can bestow upon one of its members each academic year. The award citation credits Peter's "seminal contributions that have forever shaped the foundations of quantum computing. Indeed, quantum computing exists today, in practice, because of Peter Shor." As of 2020, Shor is a Member of the National Academy of Engineering, and in 2022 Fellow of the AMS. Prof. Shor also won the Lise Meitner Distinguished Lecture and Medal in 2022, and the Breakthrough Prize in Fundamental Physics in 2023.

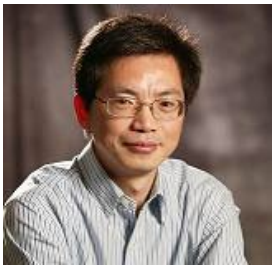
Plenary Talks

Alexander Rakhlin, Massachusetts Institute of Technology, USA

“On the Foundations of Interactive Decision Making”

Abstract: Machine learning methods are increasingly deployed in interactive environments, ranging from dynamic treatment strategies in medicine to fine-tuning of LLMs using reinforcement learning. In these settings, the learning agent interacts with the environment to collect data and necessarily faces an exploration-exploitation dilemma. We present a general framework for interactive decision making that subsumes multi-armed bandits, contextual bandits, structured bandits, and reinforcement learning. We focus on both the statistical aspect of learning---aiming to develop a tight characterization of sample complexity in terms of properties of the class of models---and on the basic algorithmic primitives.

Bio: Alexander Rakhlin is a Professor in the Department of Brain and Cognitive Sciences and the Statistics and Data Science Center at MIT. His research interests lie at the interface of Machine Learning and Statistics, with a focus on online prediction, decision-making, and the theoretical underpinnings of modern learning systems.



En-Hui Yang, University of Waterloo, Canada

"Information Theory Inspired Deep Learning"

Abstract: While deep learning (DL) has achieved remarkable empirical success, our understanding of why deep neural networks (DNNs) trained through DL work so well remains incomplete. This talk explores how concepts and tools from information theory (IT) can provide a powerful framework for understanding, analyzing, and improving DL architectures and algorithms. Drawing an analogy between human students and DNNs, we begin by abstracting a classification DNN as a high-dimensional nonlinear function that maps inputs to probability distributions. We then introduce an information geometry perspective to evaluate the structural mapping performance of the DNN — using new metrics that go beyond traditional error probability. Specifically, we use conditional mutual information (CMI) to quantify intra-class concentration in the output distribution space, and introduce a novel quantity, inter-class cross entropy, to measure inter-class separation. Building on these structural metrics, we apply optimization techniques from IT — such as rate-distortion theory and channel capacity — to guide DNN training. This leads to new DL paradigms: CMI-constrained DL (CMIC-DL), knowledge distillation (KD)-resistant DL for protecting model intellectual property, and KD-amplifying DL for enhancing student model performance. Extensive experiments show that these IT-inspired methods outperform state-of-the-art models in accuracy, robustness, and interpretability. The talk concludes by revealing a deep connection between IT and transformer decoder-based large language models, tracing the lineage back to Shannon's seminal 1948 paper.

Bio: Since 1997, he has been with the Dept. of Electrical and Computer Engineering, University of Waterloo, Ontario, Canada, where he is now a University Professor and former Canada Research Chair in information theory and applications. He is the founding director of the Leitch-University of Waterloo multimedia communications lab, a co-founder of SlipStream Data Inc. (now a subsidiary of BlackBerry), and the founder of BicDroid Inc.

He served, inter alia, as a member of Presidential Nominating Committee of the Academy of Science of Royal Society of Canada; a Board Governor of the University of Waterloo; a member of IEEE Founders Medal Committee; a review panel member for the International Council for Science; an Evaluator for the 2017 Japan Prize; an Associate Editor for IEEE Transactions on Information Theory; a general co-chair of the 2008 IEEE International Symposium on Information Theory; a technical program vice-chair of the 2006 IEEE International Conference on Multimedia & Expo (ICME); the chair of the award committee for the 2004 Canadian Award in Telecommunications; a co-editor of the 2004 Special Issue of the IEEE Transactions on Information Theory; a co-chair of the 2003 US National Science Foundation (NSF) workshop on the interface of Information Theory and Computer Science; and a co-chair of the 2003 Canadian Workshop on Information Theory.

Dr. Yang is a Fellow of IEEE, the Canadian Academy of Engineering, and the Royal Society of Canada. He is also a recipient of several awards, including the 2023 Canadian Award for Telecommunications Research; the 2021 IEEE Eric E. Sumner Award; the prestigious Inaugural Ontario Premier's Catalyst Award in 2007 for the Innovator of the Year; the 2007 Ernest C. Manning Award of Distinction, one of the Canada's most prestigious innovation prizes; the 2013 CPAC Professional Achievement Award; the 2014 IEEE Information Theory Society Padovani Lecture Award; and the 2014 FCCP Education Foundation Award of Merit. Products based on his early inventions and commercialized by his previous company, SlipStream, received the 2006 Ontario Global Traders Provincial Award. His research work has benefited people over 170 countries through commercialized products, video coding open sources, and video coding standards. In 2011, he was selected for inclusion in Canadian Who's Who.

Éva Tardos, Cornell University, USA

"Learning in Strategic Queuing"

Abstract: Over the last two decades we have developed good understanding how to quantify the impact of strategic user behavior on outcomes in many games (including traffic routing and online auctions) and showed that the resulting bounds extend to repeated games assuming players use a form of learning (no-regret learning) to adapt to the environment. In this talk, we will focus on repeated interactions that have carry-over effects between rounds: when outcomes in one round affect the game in the future, as in repeated auctions with budgets, as well as queuing systems. In this talk, we study this phenomenon in the context of a game modeling queuing systems: routers compete for servers, where packets that do not get served need to be resent, resulting in a system where the number of packets at each round depends on the success of the routers in the previous rounds. We study the required excess server capacity needed to guarantee that all packets get served in two different queuing systems (with or without buffers) despite the selfish (myopic) behavior of the participants.

Bio: Éva Tardos is a Jacob Gould Schurman Professor of Computer Science, was chair of the Department of Computer Science 2006-2010 and 2020-2023. She was Interim Dean for Computing and Information Sciences 2012-2013 and was Associate Dean for Diversity & Inclusion 2019-2020 at Cornell University. She received her BA and PhD from Eötvös University in Budapest. Tardos's research interest is algorithms and interface of algorithms and incentives. She is most known for her work on network-flow algorithms and quantifying the efficiency of selfish routing. She has been elected to the National Academy of Engineering, the National Academy of Sciences, the American Philosophical Society, the American Academy of Arts and Sciences, and to the Hungarian and Austrian Academies of Sciences. She is the recipient of a number of fellowships and awards including the Packard Fellowship, the Gödel Prize, Dantzig Prize, Fulkerson Prize, ETACS prize, and the IEEE von Neumann Medal. She co-wrote the widely used textbook Algorithms Design. She has been Editor-in-Chief of the Journal of the ACM and of the SIAM Journal of Computing, and has been editor of several other journals, and was program committee member and chair for several ACM and IEEE conferences in her area.

Nilanjana Datta, University of Cambridge, England

"Quantum Entropies in One-Shot Information Theory and Beyond"

Abstract: Entropies play a fundamental role in information theory, with the quantum relative entropy serving as a parent to several key quantities in quantum information theory, namely the von Neumann entropy, quantum conditional entropy, and quantum mutual information. These entropies have important operational interpretations, particularly as optimal rates for various information-theoretic tasks in the "asymptotic memoryless setting", where resources are assumed to be independent and identically distributed across an arbitrarily large number of uses. In the more realistic "one-shot" setting, these assumptions are lifted. In this talk, we explore two relative entropies, namely, the min- and max-relative entropies, which act as parents to entropies which govern the fundamental limits of information-theoretic tasks in the one-shot setting. These relative entropies are themselves obtainable from two families of relative entropies (the Petz Renyi divergence and the sandwiched Renyi divergence) which arise in the characterization of error exponents in hypothesis testing. The talk will highlight the operational significance of many of the above-mentioned entropies, and culminate in the introduction of a "grandparent entropy" (the α-z relative Renyi entropy) that heads a large family tree of entropies, thus providing a unifying mathematical framework for the analysis of these quantities.

Bio: Nilanjana Datta received the Ph.D. degree in mathematical physics from ETH Zurich, Switzerland, in 1996. From 1997 to 2000, she was a Post-Doctoral Researcher with the Dublin Institute of Advanced Studies, C.N.R.S. Marseille, and EPFL, Lausanne. In 2001, she joined the University of Cambridge, U.K., as a Lecturer in Mathematics with the Pembroke College, and a member of the Statistical Laboratory, Centre for Mathematical Sciences. She is currently a Professor in Quantum Information Theory with the Department of Applied Mathematics and Theoretical Physics, University of Cambridge. Her scientific research interests include quantum information theory and mathematical physics. She is a Fellow of Pembroke College.

Technical Program: Sunday, June 22, 2025

07:30 – 19:00
Registration Open
Room: Michigan League - Kalamazoo

08:30 – 10:00
Tutorial: IT-Foundations of Generative Models
Room: Michigan League - Lydia Mendelssohn Theatre

Organizers: *Lalitha Sankar and Monica Welfert (Arizona State University, USA)*

08:30 – 10:00
Tutorial: Post-Quantum Cryptography
Room: Michigan League - Ballroom

Organizers: *Joseph Boutros and Alex Sprintson (Texas A&M University, USA)*

10:00 - 10:30
Coffee Break
Room: Michigan League - Ballroom

10:00 – 14:00
Quantum Hackathon
Room: Michigan League - Henderson

10:30 – 12:00
Tutorial: IT-Foundations of Generative Models
Room: Michigan League - Lydia Mendelssohn Theatre

Organizers: *Lalitha Sankar and Monica Welfert (Arizona State University, USA)*

10:30 – 12:00
Tutorial: Post-Quantum Cryptography
Room: Michigan League - Ballroom

Organizers: *Joseph Boutros and Alex Sprintson (Texas A&M University, USA)*

12:00 – 13:00
Lunch
Room: Michigan League - Ballroom

13:00 – 15:00
Tutorial: Neural Compression: Estimating and Achieving the Fundamental Limits
Room: Michigan League - Lydia Mendelssohn Theatre

Organizers: *Shirin Saeedi Bidokhti, Hamed Hassani and Eric Lei (University of Pennsylvania, USA)*

13:00 – 15:00
Tutorial: A Unified Framework for Network IT
Room: Michigan League - Ballroom

Organizers: *Si-Hyeon Lee (Korea Advanced Institute of Science & Technology (KAIST), Korea) and Cheuk Ting Li (Chinese University of Hong Kong, China)*

15:00 – 15:30
Coffee Break
Room: Michigan League - Ballroom

15:30 – 17:00
Tutorial: Neural Compression: Estimating and Achieving the Fundamental Limits
Room: Michigan League - Lydia Mendelssohn Theatre

Organizers: *Shirin Saeedi Bidokhti, Hamed Hassani and Eric Lei (University of Pennsylvania, USA)*

15:30 – 17:00
Tutorial: A Unified Framework for Network IT
Room: Michigan League - Ballroom

Organizers: *Si-Hyeon Lee (Korea Advanced Institute of Science & Technology (KAIST), Korea) and Cheuk Ting Li (Chinese University of Hong Kong, China)*

17:30 – 21:00
Welcome Reception
Room: Michigan League - Ballroom, Hussey, Vandenburgh & Concourse

Technical Program: Monday, June 23, 2025

07:30 – 17:00
Registration Open
Room: Michigan League - Concourse

07:30 – 16:00
Exhibit Booths Open
Room: Michigan League - Ballroom

08:30 – 09:35
Plenary: On the Foundations of Interactive Decision Making
Speaker: Alexander Rakhlin, Massachusetts Institute of Technology, USA
Room: Michigan League - Lydia Mendelssohn Theatre

09:35 – 09:50
Moving Break

09:50 – 11:10
Student Paper Award Session I
Building: Rackham Graduate School - Amphitheater

Exact Random Graph Matching With Multiple Graphs
Taha Ameen (University of Illinois at Urbana-Champaign, USA); Bruce Hajek (University of Illinois, USA)

Fractional Subadditivity of Submodular Functions: Equality Conditions and Their Applications
Gunank Jakhar, Gowtham R. Kurri and Suryajith Chillara (International Institute of Information Technology, Hyderabad, India); Vinod M Prabhakaran (Tata Institute of Fundamental Research, India)

On Statistical Estimation of Edge-Reinforced Random Walks
Qinghua Ding (University of California at Berkeley, USA); Venkatachalam Anantharam (Berkeley, USA)

09:50 – 11:10
Session MO1
Building: Michigan League

09:50 – 11:10
Privacy I
Room: Michigan League - Lydia Mendelssohn Theatre

09:50
Differentially Private Secure Multiplication With Erasures and Adversaries
Haoyang Hu and Viveck Cadambe (Georgia Institute of Technology, USA)

10:10
Privacy-Constrained Lossy Function Computation in Distributed Databases
Vamoua Yachongka and Remi A Chou (University of Texas at Arlington, USA)

10:30
Differentially Private Distributed Mean Estimation With Constrained User Correlations
Sajani Vithana (Harvard University, USA); Viveck Cadambe (Georgia Institute of Technology, USA); Flavio P Calmon (Harvard University, USA); Haewon Jeong (University of California, Santa Barbara, USA)

10:50
On the Source Model Key Agreement Problem
Hamidreza Abin (Chinese University of Hong Kong, Hong Kong); Amin Gohari (The Chinese University of Hong Kong, Hong Kong)

09:50 – 11:10
Quantum Information Theory
Room: Michigan League - Hussey

09:50
A Complete Characterization of Passive Unitary Normalizable (PUN) Gaussian States
Tiju Cherian John (University of Arizona, USA); Saikat Guha (University of Maryland, USA); Hemant K. Mishra (IIT (ISM) Dhanbad, India)

10:10
Active Hypothesis Testing for Quantum Detection of Phase-Shift Keying Coherent States
Yun-Feng Lo and Matthieu Bloch (Georgia Institute of Technology, USA)

10:30
Improved Classical Shadow Tomography Using Quantum Computation
Zahra Honjani (Indiana University, Bloomington, USA); Mohsen Heidari (Indiana University, USA)

09:50 – 11:10
Integrated Sensing and Communication
Room: Michigan League - Vandenburgh

09:50
On the Scaling Law Tradeoff of Integrated Sensing and Communication Networks
Min Qiu (University of New South Wales, Australia); Ming-Chun Lee and Yu-Chih Huang (National Yang Ming Chiao Tung University, Taiwan); Jinhong Yuan (University of New South Wales, Australia)

10:10
On the Sensing Capacity of Gaussian "Beam-Pointing" Channels With Block Memory and Feedback
Siyao Li (Embry-Riddle Aeronautical University, USA); Shuangyang Li (Technical University of Berlin, Germany); Giuseppe Caire (Technische Universität Berlin, Germany)

10:30
Computation of Capacity-Distortion-Cost Functions for Continuous Memoryless Channels
Xinyang Li and Ziyou Tang (Technical University of Munich, Germany); Vlad Costin Andrei (Technische Unversität München, Germany); Ullrich J. Mönich (Technische Universität München, Germany); Fan Liu (Southeast University, China); Holger Boche (Technical University Munich, Germany)

10:50
Rate Distortion Approach to Joint Communication and Sensing With Markov States: Open Loop Case
Colton P Lindstrom and Matthieu Bloch (Georgia Institute of Technology, USA)

09:50 – 11:10
Polar Codes I
Room: Michigan League - Koessler

09:50
Perturbation-Based Decoding Schemes for Long Polar Codes
Zhongjun Yang and Li Chen (Sun Yat-sen University, China); Xianbin Wang (Huawei Technologies, Co. Ltd., China); Kangjian Qin (Huawei Technologies, Co., Ltd., China); Huazi Zhang (Huawei Technologies, Co. Ltd., China)

10:10
Partial Orders of Rate-Compatible Polar Codes
Zhichao Liu and Liuquan Yao (University of Chinese Academy and Sciences, China); Yuan Li (Huawei Technologies Co., Ltd., China); Huazi Zhang (Huawei Technologies, Co. Ltd., China); Jun Wang (Huawei Technologies Co. Ltd, China); Guiying Yan and Zhiming Ma (Chinese Academy of Sciences, China)

10:30
A Method to Reduce the Complexity of Computing the Weight Distribution of Polar Codes
Zhichao Liu (University of Chinese Academy and Sciences, China & Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China); Zhiming Ma and Guiying Yan (Chinese Academy of Sciences, China)

10:50
A Parity-Consistent Decomposition Algorithm to Determine the Weight Distribution of Polar Codes
Yang Liu, Bolin Wu, Yuxin Han and Kai Niu (Beijing University of Posts and Telecommunications, China)

09:50 – 11:10
Reed-Solomon Codes
Room: Michigan League - Michigan

09:50
Anonymous Shamir's Secret Sharing via Reed--Solomon Codes Against Permutations, Insertions, and Deletions
Roni Con (Technion, Israel)

10:10
The Permutation Group of Reed-Solomon Codes Over Arbitrary Points
Eduardo Camps-Moreno and Hiram H Lopez (Virginia Tech, USA); Welington Santos (University of Wisconsin-Stout, USA); Jun Bo Lau (KU Leuven, Belgium)

10:30
Efficient Covering Using Reed-Solomon Codes
Samin Riasat (Northeastern University, USA); Hessam Mahdavifar (Northeastern, USA)

09:50 – 11:10
Broadcast Channels
Room: Michigan League - Henderson

09:50
Degradedness Under Cooperation
Yossef Steinberg (Technion - Israel Institute of Technology, Israel)

10:10
A Simple Auxiliary Receiver Outer Bound for Broadcast Channels
Yanlin Geng (Xidian University, China)

10:30
A Conjecture Regarding the Optimizers of Marton's Inner Bound for the Two-Receiver Broadcast Channel
Amin Gohari, Yi Liu and Chandra Nair (The Chinese University of Hong Kong, Hong Kong)

10:50
Broadcasting Bits Through Discrete-Time Queues
Andrew Perley (Stanford University, USA); Todd Coleman (Stanford, USA)

09:50 – 11:10
Sequences
Room: Michigan League – Room D

09:50
Uncorrelated ZCZ Sequence Families Over PSK/PSK+ Alphabet of Small Size Using Cyclic Relative Difference Sets
Gangsan Kim and Hong-Yeop Song (Yonsei University, Korea (South))

10:10

Function-Based Construction of Two-Dimensional Binary Golay-ZCZ Array Pair of Length Non-Power-of-Two

Aditya Prakash (Indian Institute of Technology Patna, India); Tzu-Chieh Kao (National Cheng Kung University, Tainan, Taiwan); Sudhan Majhi (Indian Institute of Science, India & Indian Institute of Technology Patna, India); Prashant Kumar Srivastava (IIT Patna, India); Chao-Yu Chen (National Cheng Kung University, Taiwan)

10:30

On the Construction of Mutually Unbiased Sets of Orthogonal Vectors

Zilong Wang and Tao Zhang (Xidian University, China); Qi Feng (Huawei Technologies Co., Ltd., China); Fan Wang (Huawei Technologies, Co. Ltd., China); Gennian Ge (Hangzhou University, China)

10:50

A Novel Construction of Gaussian Integer Periodic Z-Complementary Sets

Zhen-Ming Huang, Hsiang-Yu Hsieh, Cheng-Yu Pai and Chao-Yu Chen (National Cheng Kung University, Taiwan)

11:10 – 11:30
Coffee Break
Room: Michigan League - Ballroom

11:30 – 12:50
Student Paper Award Session II
Building: Rackham Graduate School - Amphitheater

Monotonicity of the Von Neumann Entropy Under Quantum Convolution

Salman Beigi (Institute for Research in Fundamental Sciences, Iran); Hami Mehrabi (Cornell University, USA)

Capacities of Entanglement Distribution From a Central Source

Xinan Chen (University of Illinois at Urbana-Champaign, USA); Stefano Chessa (University of Illinois Urbana-Champaign, USA); Ian George (National University of Singapore, Singapore); Felix Leditzky and Eric Chitambar (University of Illinois Urbana-Champaign, USA)

The Redundancy of Non-Singular Channel Simulation

Gergely Flamich (University of Cambridge, United Kingdom (Great Britain)); Sharang Mudlapura Sriramu and Aaron Wagner (Cornell University, USA)

11:30 – 12:50
Session MO2
Building: Michigan League

11:30 – 12:50
Privacy II
Room: Michigan League - Lydia Mendelssohn Theatre

11:30

On the Extremal Mechanisms for Local Differential Privacy & Binary Maximal Leakage

Cemre Cadir (EPFL, Switzerland); Yanina Y. Shkel (Ecole Polytechnique Fédérale, Lausanne, Switzerland)

11:50

Personalized Heterogeneous Mean Estimation Under User-Level LDP

Ruida Zhou, Antonious M. Girgis and Suhas Diggavi (University of California, Los Angeles, USA)

12:10

Improving the Privacy Loss Under User-Level DP Composition for Fixed Estimation Error

V. Arvind Rameshwar (India Urban Data Exchange, India); Anshoo Tandon (IUDX Program Unit, SID, IISc, India); Abhay Sharma (IUDX Program Unit, SID, IISc, Bengaluru, India)

12:30
Differential Confounding Privacy and Inverse Composition
Tao Zhang (Washington University in St. Louis, USA); Bradley Malin (Vanderbilt University, USA); Netanel Raviv (Washington University in Saint Louis, USA); Yevgeniy Vorobeychik (Washington University in St. Louis, USA)

11:30 – 12:50
Quantum Shannon Theory I
Room: Michigan League - Hussey

11:30
Quantum Relay Channels
Uzi Pereg (Technion, Israel)

11:50
Additivity of Quantum Capacities in Simple Non-Degradable Quantum Channels
Peixue Wu (University of Waterloo, Canada); Graeme Smith (University of Colorado Bolder, USA)

12:10
Riemannian Optimization for Holevo Capacity
Chengkai Zhu (The Hong Kong University of Science and Technology (Guangzhou), China); Renfeng Peng and Bin Gao (Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China); Xin Wang (The Hong Kong University of Science and Technology (Guangzhou), China)

12:30
Extendible Quantum Measurements and Limitations on Classical Communication
Vishal Singh, Theshani Nuradha and Mark M Wilde (Cornell University, USA)

11:30 – 12:50
Distributed Computation
Room: Michigan League - Vandenburgh

11:30
CAT and DOG: Improved Codes for Private Distributed Matrix Multiplication
Christoph Hofmeister and Rawad Bitar (Technical University of Munich, Germany); Antonia Wachter-Zeh (Technical University of Munich (TUM), Germany)

11:50
On Optimal Batch Size in Coded Computing
Swapnil Saha (Electrical and Computer Engineering, Rutgers University-New Brunswick, USA); Emina Soljanin (Rutgers University, USA); Philip Whiting (Macquarie University, Australia)

12:10
Order Optimal Cascaded Coded Distributed Computing with Low Complexity and Improved Flexibility
Mingming Zhang (Guangxi Normal University, China); Youlong Wu (ShanghaiTech University, China); Minquan Cheng and Dianhua Wu (Guangxi Normal University, China)

12:30
Private Coded Distributed Computing Framework
Shanuja Sasi and Onur Günlü (Linköping University, Sweden)

11:30 – 12:50
Polar Codes II
Room: Michigan League - Koessler

11:30
Low-Complexity PSCL Decoding of Polar Codes
Xinyuanmeng Yao (Ningbo University of Technology, China); Xiao Ma (Sun Yat-sen University, China)

11:50

PAC Codes With Bounded-Complexity Sequential Decoding: Pareto Distribution and Code Design

Mohsen Moradi (Northeastern University, USA); Hessam Mahdavifar (Northeastern, USA)

12:10

On the Weight Spectrum of Rate-Compatible Polar Codes

Zicheng Ye (Huawei Technologies Co. Ltd, China); Yuan Li (Huawei Technologies Co., Ltd., China); Zhichao Liu (University of Chinese Academy and Sciences, China & Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China); Huazi Zhang (Huawei Technologies, Co. Ltd., China); Jun Wang (Huawei Technologies Co. Ltd, China); Guiying Yan and Zhiming Ma (Chinese Academy of Sciences, China)

12:30

On the Average Weight Spectrum of Pre-Transformed Rate-Compatible Polar Codes

Yuan Li (Huawei Technologies Co., Ltd., China); Zicheng Ye (Huawei Technologies Co. Ltd, China); Huazi Zhang (Huawei Technologies, Co. Ltd., China); Jun Wang (Huawei Technologies Co. Ltd, China); Guiying Yan and Zhiming Ma (Chinese Academy of Sciences, China)

11:30 – 12:50
MIMO and Massive MIMO I
Room: Michigan League - Michigan

11:30

Robust Precoding and Rate-Splitting Multiple Access for FDD Massive MIMO Without CSI Feedback

Namhyun Kim and Jeonghun Park (Yonsei University, Korea (South))

11:50

Achievable DoF Bounds for Cache-Aided Asymmetric MIMO Communications

Mohammad NaseriTehrani (Centre for Wireless Communications, University of Oulu, Finland & University of Oulu, Finland); MohammadJavad Salehi and Antti Tölli (University of Oulu, Finland)

12:10

Collaborative Coded Caching for Partially Connected Networks

Kagan Akcay (TU Berlin, Germany); Eleftherios Lampiris (Technical University of Berlin, Germany); MohammadJavad Salehi (University of Oulu, Finland); Giuseppe Caire (Technische Universität Berlin, Germany)

12:30

SIC-Free Multicast Scheduling for Multi-Antenna Coded Caching

Mohammadjavad Sojdeh, MohammadJavad Salehi and Antti Tölli (University of Oulu, Finland)

11:30 – 12:50
Combinatorics and Complexity
Room: Michigan League - Henderson

11:30

Improved Lower Bounds on the Expected Length of Longest Common Subsequences

Duncan S Soiffer (Carnegie Mellon University, USA); Andrew Salls, Chase P Miller, Daniel Reichman, Gabor Sarkozy and George Heineman (Worcester Polytechnic Institute, USA)

11:50

Construction of MOGCS With Flexible Parameters via Extended Boolean Functions

Abhishek Roy and Smarajit Das (Indian Institute of Technology Guwahati, India); Sudhan Majhi (Indian Institute of Science, India & Indian Insitute of Technology Patna, India)

12:10
Arithmetic Complexity of the Secrecy Capacity of Fast-Fading Gaussian Channels
Holger Boche (Technical University Munich, Germany); Andrea Grigorescu (Technical University of Munich, Germany); Rafael F. Schaefer (Technische Universität Dresden, Germany); H. Vincent Poor (Princeton University, USA)

12:30
Reductions Between Code Equivalence Problems
Mahdi Cheraghchi, Nikhil Shagrithaya and Alexandra Veliche (University of Michigan, Ann Arbor, USA)

11:30 – 12:50
Reed-Muller Codes
Room: Michigan League - Room D

11:30
An Upper Bound on the Error Probability of RPA Decoding of Reed-Muller Codes Over the BSC
V. Arvind Rameshwar (India Urban Data Exchange, India); V. Lalitha (IIIT Hyderabad, India)

11:50
Subcodes of Second-Order Reed-Muller Codes via Recursive Subproducts
A P Vaideeswaran (IIT Hyderabad, India); Sai Harish Madireddi (Indian Institute of Technology Hyderbad, India); Lakshmi Prasad Natarajan (Indian Institute of Technology Hyderabad, India)

12:10
On the Worst-Case Complexity of Gibbs Decoding for Reed-Muller Codes
Xuzhe Xia (University of British Columbia, Canada); Nicholas Kwan (University of Toronto, Canada); Lele Wang (University of British Columbia, Canada)

12:30
On the Service Rate Region of Reed-Muller Codes
Hoang Ly Minh and Emina Soljanin (Rutgers University, USA); V. Lalitha (IIIT Hyderabad, India)

12:50 – 14:30
Lunch
Room: Michigan League - Ballroom

13:00 – 14:20
Social Event: Alumni in Industry
Building: Rackham Graduate School - Amphitheater

14:30 – 15:50
Recent Results Poster Session
Building: Michigan League - Ballroom

Logarithmic Constraint Violation and $O(\sqrt{T})$ Regret for COCO
Abhishek Sinha and Rahul Vaze (Tata Institute of Fundamental Research, India)

Secure Key-Dissemination with Multiple Eavesdropping Nodes
Reza Sayyari and Michael Langberg (The State University of New York at Buffalo, USA)

Submodularity and Concentration of Mutual Information as a Cost Function for Sensor Placement Problems
George Crowley and Inaki Esnaola (The University of Sheffield, United Kingdom)

Side-Information or Feedback: Their Roles in Scalar Joint Source-Channel Coding over Gilbert-Elliot Channels
Ting-Jhong Sie (National Taiwan Ocean University, Taiwan); Jian-Jia Weng (National Chung Cheng University, Taiwan)

Exact Channel Simulation under Exponential Cost
Spencer Hill, Fady Alajaji and Tamas Linder (Queen's University, Canada)

Between Close Enough to Reveal and Far Enough to Protect: a New Privacy Region for Correlated Data
Luis Massny and Rawad Bitar (Technical University of Munich, Germany); Fangwei Ye (Nanjing University of Aeronautics and Astronautics, China); Salim El Rouayheb (Rutgers University, USA)

Rate-Reliability functions for Deterministic Identification
Pau Colomer and Holger Boche (Technical University of Munich, Germany); Christian Deppe (Technical University of Braunschweig, Germany); Andreas Winter (University of Cologne, Germany & Autonomous University of Barcelona, Spain)

On Heterogeneous Linearly Separable Computation
Haoning Chen and Youlong Wu (ShanghaiTech University, China)

A Poincaré Lower Bound Approach for Performance Trade-offs in MIMO ISAC Systems with Blockage
Mohammadreza Bakhshizadeh Mohajer, Luca Barletta and Daniele Lo Iacono (Politecnico di Milano, Italy); Daniela Tuninetti (University of Illinois Chicago, USA); Alessandro Tomasoni and Fabio Osnato (STMicroelectronics, Italy)

Reveal-or-Obscure: A Differentially Private Sampling Algorithm for Discrete Distributions
Naima Tasnim, Atefeh Gilani, Lalitha Sankar, and Oliver Kosut (Arizona State University, USA)

Optimal Additive Noise Mechanisms for Differential Privacy
Atefeh Gilani, Oliver Kosut and Lalitha Sankar (Arizona State University, USA); Juan Felipe Gomez and Flavio P. Calmon (Harvard University, USA); Shahab Asoodeh (McMaster University, Canada)

A Locally Differential Private Coding-Assisted Succinct Histogram Protocol
Hsuan-Po Liu (University of Michigan, USA); Hessam Mahdavifar (Northeastern University, USA)

Sample Complexity Bounds for Estimation in Models of Network Averaging Dynamics
Abram Magner and Amith K. Singh (University at Albany, State University of New York, USA)

New local stabilizer codes from local classical codes
Lane Gunderman (University of Illinois Chicago, USA)

Follow-Up Study on ``Efficient Mitigation of Error Floors in Quantum Error Correction using Non-Binary LDPC Codes''
Kenta Kasai (Institute of Science Tokyo, Japan)

Tight Exponential Strong Converses for Lossy Source Coding with Side-Information and Distributed Function Computation
Shun Watanabe (Tokyo University of Agriculture and Technology, Japan)

Amortized Locally Decodable Codes for Insertions and Deletions
Jeremiah Blocki and Justin Zhang (Purdue University, USA)

Covert Communication and Key Generation Over Quantum State-Dependent Channels
Hassan ZivariFard and Xiaodong Wang (Columbia University, USA); Remi A. Chou (The University of Texas at Arlington, USA)

Sequential Change Point Detection via Denoising Score Matching
Wenbin Zhou and Shixiang Zhu (Carnegie Mellon University, USA); Liyan Xie (University of Minnesota, USA); Zhigang Peng (Georgia Institute of Technology, USA)

Covert Capacity of Channels with Full Action-Dependent States
Hassan ZivariFard and Xiaodong Wang (Columbia University, USA)

Perturbation-Based Decoding Schemes for Long Polar Codes
Zhongjun Yang and Li Chen (Sun Yat-sen University, China); Kangjian Qin (Guangdong Province Key Laboratory of Information Security Technology, China); Xianbin Wang and Huazi Zhang (Huawei Technologies Co., China)

Identification Over Noisy Permutation Channels
Abhishek Sarkar and Bikash Kumar Dey (Indian Institute of Technology Bombay, India)

Private Aggregation for Byzantine-Resilient Heterogeneous Federated Learning
Maximilian Egger and Rawad Bitar (Technical University of Munich, Germany)

Bayesian Linear Causal Discovery: Posterior concentration and Sampling
Valentinian Lungu and Ioannis Kontoyiannis (University of Cambridge, United Kingdom); Joni Shashka and Urbashi Mitra (University of Southern California, USA)

Belief Propagation Decoder for Product Codes
Yifei Shen and Andreas Burg (EPFL, Switzerland); Zongyao Li, Chuan Zhang and Xiaohu You (Southeast University, Bangladesh); Emmanuel Boutillon (Universite Bretagne Sud, France)

On Perfect Functional Representations
Serhat Emre Coban, Yanina Shkel and Emre Telatar (EPFL, Switzerland)

Rejection-Sampled Linear Codes for Lossy Compression and Channel Simulation
Cheuk Ting Li and Jianguo Zhao (The Chinese University of Hong Kong, China)

Capacity of Passive Aperture-Constrained Free Space Optical Communications with a Narrow-Band Thermal Light Source
Ali Cox (University of Arizona, USA); Saikat Guha (University of Maryland, USA)

How Many Simultaneous Beamformers are Needed for Integrated Sensing and Communications?
Kareem M. Attiah and Wei Yu (University of Toronto, Canada)

Low-Complexity Ordered Reliability Direct Error Pattern Testing (ORDEPT) Decoding with Likelihood Thresholding
Reza Hadavian and Dmitri Truhachev (Dalhousie University, Canada)

Ordinal-Poisson Causal Discovery
Joni Shaska and Urbashi Mitra (University of Southern California, USA)

Sequential Unambiguous Quantum State Discrimination
Jeremy Johnston and Xiaodong Wang (Columbia University, USA)

Golay Unitary Matrices for Compressed Sensing Measurement
Ying Li and Jui-Hsiu Kuo (Yuan Ze University, Taiwan)

A New Reversible Data Hiding Scheme in Encrypted Images
Zihang Wu and Shu Liu (University of Electronic Science and Technology of China, China)

More Towards Quantum Universal Hypothesis Testing
Arick Grootveld, Venkata Gandikota and Biao Chen (Syracuse University, USA)

Accurate, provable, and fast nonlinear tomographic reconstruction: A variational inequality approach
Mengqi Lou and Ashwin Pananjady (Georgia Institute of Technology, USA); Kabir Aladin Verchand (University of Cambridge, United Kingdom); Sara Fridovich-Keilà (Stanford University, USA)

14:30 – 15:50
Session MO3
Building: Michigan League

14:30 – 15:50
Coded Computation I
Room: Michigan League - Lydia Mendelssohn Theatre

14:30
Optimal Communication-Computation Trade-off in Hierarchical Gradient Coding
Ali Gholami (Technical University of Berlin, Germany); Tayyebeh Jahani-Nezhad (Technische Universität Berlin, Germany); Kai Wan (Huazhong University of Science and Technology, China); Giuseppe Caire (Technische Universität Berlin, Germany)

14:50
Dual-Lagrange Encoding for Storage and Download in Elastic Computing for Resilience
Xi Zhong (University of Florida, USA); Samuel Lu (University of Utah, USA); Joerg Kliewer (New Jersey Institute of Technology, USA); Mingyue Ji (University of Florida, USA)

15:10
Communication-Efficient Approximate Gradient Coding Using Structured Matrices
Sifat Munim and Aditya Ramamoorthy (Iowa State University, USA)

14:50
Constructing Hamiltonian Decompositions of Complete K-Uniform Hypergraphs
Javad Maheri (Eurecom, France); Petros Elia (EURECOM, France)

14:30 – 15:50
Quantum Shannon Theory II
Room: Michigan League - Hussey

14:30
The Quantum Identification Capacity With Entanglement Assistance
Johannes Rosenberger (Technical University of Munich, Germany); Holger Boche (Technical University Munich, Germany); Christian Deppe (Technical University of Braunschweig, Germany); Uzi Pereg (Technion, Israel)

14:50
Monotonicity of the Von Neumann Entropy Under Quantum Convolution
Salman Beigi (Institute for Research in Fundamental Sciences, Iran); Hami Mehrabi (Cornell University, USA)

15:10
Quantum Capacity Amplification via Privacy
Peixue Wu and Yunkai Wang (University of Waterloo, Canada)

14:30 – 15:50
Network Coding I
Room: Michigan League - Vandenburgh

14:30
On Minimum Distances of Network Error Control Codes
Yulin Chen (The Chinese University of Hong Kong, Hong Kong & Institute of Network Coding, Hong Kong); Raymond W. Yeung (The Chinese University of Hong Kong, Hong Kong)

14:50
New Bounds and Constructions for Variable Packet-Error Coding
Xiangliang Kong (Tel-Aviv University, Israel); Xin Wang (Soochow University, China); Ron M Roth (Technion, Israel); Itzhak Tamo (Tel Aviv University, Israel)

15:10
Two-Dimensional Vector Linear Network Coding
Lan Ma and Qifu T Sun (University of Science and Technology Beijing, China); Zongpeng Li (Tsinghua University, China)

15:30
On the Capacity of Undirected Multiple Unicast Layered Networks With Asymmetric Demands
Surya Vamsi Medapalli and Satyajit Thakor (Indian Institute of Technology Mandi, India)

14:30 – 15:50
Hypothesis Testing I
Room: Michigan League - Koessler

14:30
The Query/Hit Model for Sequential Hypothesis Testing
Mahshad Shariatnasab (Florida International University, USA); Stefano Rini (National Yang Ming Chiao Tung University, Taiwan); Farhad Shirani and Sitharama Iyengar (Florida International University, USA)

14:50
Error Exponents for Robust Hypothesis Testing With Abstention
Malhar A Managoli (Tata Institute of Fundamental Research, India); Sahasranand Kr (IIT Palakkad, India); Vinod M Prabhakaran (Tata Institute of Fundamental Research, India)

15:10
A New Upper Bound for Distributed Hypothesis Testing Using the Auxiliary Receiver Approach
Zhenduo Wen (Chinese University of Hong Kong, Hong Kong); Amin Gohari (The Chinese University of Hong Kong, Hong Kong)

15:30
Multi-Stage Active Sequential Hypothesis Testing With Clustered Hypotheses
George Vershinin and Asaf Cohen (Ben-Gurion University of the Negev, Israel); Omer Gurewitz (Ben-Gurion University Of The Negev, Israel)

14:30 – 15:50
MIMO and Massive MIMO II
Room: Michigan League - Michigan

14:30
A MIMO ISAC System for Ultra-Reliable and Low-Latency Communications
Homa Nikbakht (Princeton University, USA); Yonina C. Eldar (Weizmann Institute of Science, Israel); H. Vincent Poor (Princeton University, USA)

14:50
ISAC-Enabled Statistical-QoS Provisioning for mURLLC Over Massive MIMO Mobile Networks Using FBC
Xi Zhang and Qixuan Zhu (Texas A&M University, USA); H. Vincent Poor (Princeton University, USA)

15:10
On-Grid Angle-of-Arrival Estimation in Large-Scale MIMO Systems Using Channel Codes
Nadim Ghaddar (University of Toronto, Canada); Lele Wang (University of British Columbia, Canada); Wei Yu (University of Toronto, Canada)

15:30
Capacity of Holographic MIMO Systems With Mutual Coupling
Xin Zhang, Zeyan Zhuang and Shenghui Song (The Hong Kong University of Science and Technology, Hong Kong); Chau Yuen (Nanyang Technological University, Singapore); Mérouane Debbah (Khalifa University of Science and Technology, France)

14:30 – 15:50
Multiterminal Source Coding
Room: Michigan League - Henderson

14:30
Nonasymptotic Oblivious Relaying and Variable-Length Noisy Lossy Source Coding
Yanxiao Liu (The Chinese University of Hong Kong, Hong Kong); Sepehr Heidari Advary (Sharif University of Technology, Iran); Cheuk Ting Li (The Chinese University of Hong Kong, Hong Kong)

14:50

Achievable Rates for a Primitive Gaussian Diamond Channel With Rayleigh Fading

Yi Song (Technische Universität Berlin, Germany); Hao Xu (Southeast University, China); Kai Wan (Huazhong University of Science and Technology, China); Kai-Kit Wong (University College London, United Kingdom (Great Britain)); Giuseppe Caire (Technische Universität Berlin, Germany); Shlomo (Shitz) Shamai (The Technion, Israel)

15:10

Unification of Distributed Source Coding, Multiple Description Coding, and Source Coding With Side Information at Decoders

Jun Muramatsu (Waseda University, Japan)

15:30

Byzantine Distributed Function Computation

Hari Krishnan P Anilkumar (Tata Institute of Fundamental Research, India); Neha Sangwan (University of California, San Diego, India); Varun Narayanan (Technion, India); Vinod M Prabhakaran (Tata Institute of Fundamental Research, India)

14:30 – 15:50
Algebraic Codes I
Room: Michigan League - Room D

14:30

Performance Analysis and Enhanced Chase Decoding of BCH Based GII Codes

Xinzheng He and Li Chen (Sun Yat-sen University, China); Yingquan Wu (Micron Technology, USA)

14:50

An Infinite Family of Additive Codes over the Ring with Lee Distance 8

Sujata Bansal (Indian Institute of Technology, Dhanbad, India); Pramod Kumar Kewat (IIT ISM DHANBAD, India)

15:10

On the Minimum Distance and Erasure Correction of Codes With Block Circulant Topology

Birenjith Padmakumari Sasidharan and Emanuele Viterbo (Monash University, Australia); Son Hoang Dau (RMIT University, Australia)

15:30

From Bit to Block: Decoding on Erasure Channels

Oscar Sprumont (University of Washington, USA); Henry D Pfister (Duke University, USA); Gilles Zémor (Université de Bordeaux, France)

15:50 – 16:10
Coffee Break
Building: Michigan League - Ballroom

16:10 – 17:30
D2I Competition Showcase
Building: Rackham Graduate School - Amphitheatre

16:10 – 17:30
Session MO4
Building: Michigan League

16:10 – 17:30
Coded Computation II
Room: Michigan League - Lydia Mendelssohn Theatre

16:10

A Network Coding-Based Approach to Floating-Point Sum Reduction

Zhuoqi Tu, Yi Chen and Shenghao Yang (The Chinese University of Hong Kong, Shenzhen, China)

16:30
Lagrange Coding for Tensor Network Contraction: Achieving Polynomial Recovery Thresholds
Kerong Wang (University of California, Santa Barbara, USA); Zheng Zhang (UC Santa Barbara, USA); Qian Yu (Princeton University, USA)

16:50
Approximate Gradient Coding Using Convex Optimization
Sifat Munim and Aditya Ramamoorthy (Iowa State University, USA)

17:10
An Achievable Scheme for the K-User Linear Computation Broadcast Channel
Yinbin Ma and Daniela Tuninetti (University of Illinois Chicago, USA)

16:10 – 17:30
Network Quantum Information Theory
Room: Michigan League - Hussey

16:10
Quantum Advantage in Non-Interactive Source Simulation
Hojat Allah Salehi and Farhad Shirani (Florida International University, USA); S. Sandeep Pradhan (University of Michigan, USA)

16:30
Covert Communication Over a Quantum MAC With a Helper
Hassan ZivariFard (Columbia University, USA); Remi A Chou (University of Texas at Arlington, USA); Xiaodong Wang (Columbia University, USA)

16:50
The Interference Channel With Entangled Transmitters
Jonas Hawellek, Athin Mohan, Hadi Aghaee and Christian Deppe (Technische Universität Braunschweig, Germany)

16:10 – 17:30
Privacy III
Room: Michigan League - Vandenburgh

16:10
Differentially-Private Decentralized Learning in Heterogeneous Multicast Networks
Amir Ziaeddini, Yauhen Yakimenka and Joerg Kliewer (New Jersey Institute of Technology, USA)

16:30
Auditing Privacy of Additive Noise Mechanisms Using Linear Predictive Models
Monica Welfert and Nathaniel Stromberg (Arizona State University, USA); Mario Diaz (Universidad Nacional Autonoma de Mexico, Mexico); James Melbourne (CIMAT, Mexico); Lalitha Sankar (Arizona State University, USA)

16:50
Private Spectral Clustering Over Binary Stochastic Block Models
Mohamed Seif (Princeton University, USA); Antti Koskela (Nokia Bell Labs, Finland); Andrea Goldsmith (Princeton University, USA)

17:10
Private Counterfactual Retrieval With Immutable Features
Shreya Meel and Pasan Dissanayake (University of Maryland, College Park, USA); Mohamed Nomeir, Sanghamitra Dutta and Sennur Ulukus (University of Maryland, USA)

16:10 – 17:30
Control and Communications
Room: Michigan League - Koessler

16:10
Lower Bound of Networked Linear Quadratic Gaussian Plant With Two Linear Sensors and One Controller
Sijie Li and Hyeji Kim (University of Texas at Austin, USA); Takashi Tanaka (Purdue University, USA)

16:30
Zero Estimation Cost Strategy for Witsenhausen Counterexample With Causal Encoder
Mengyuan Zhao and Tobias J. Oechtering (KTH Royal Institute of Technology, Sweden); Mael Le Treust (University Rennes, CNRS, Inria, IRISA, France)

16:50
Dynamic Programming and Information States for Decentralized Stochastic Control With Delayed Sharing Patterns
Charalambos D Charalambous (University of Cyprus, Cyprus)

17:10
Which Sensor to Observe? Timely Tracking of a Joint Markov Source With Model Predictive Control
İsmail Coşandal and Sennur Ulukus (University of Maryland, USA); Nail Akar (Bilkent University, Turkey)

16:10 – 17:30
Compressed Sensing and Sparsity
Room: Michigan League - Michigan

16:10
Phase Transitions in Phase-Only Compressed Sensing
Junren Chen (University of Hong Kong, Hong Kong); Lexiao Lai (The University of Hong Kong, Hong Kong); Arian Maleki (Columbia University, USA)

16:30
Phase Retrieval of Spectrally Sparse Signals
Xianyin Zhang (Fudan University, China); Jinchi Chen (East China University of Science and Technology, China); Ke Wei (Fudan University, China)

16:50
Property Inheritance for Subtensors in Tensor Train Decompositions
HanQin Cai (University of Central Florida, USA); Longxiu Huang (Michigan State University, USA & Michigan, USA)

16:10 – 17:30
Cyclic and Coset Codes
Room: Michigan League - Henderson

16:10
A Decoding Algorithm for Skew Cyclic Generalized Skew Reed Solomon Codes
Delphine Boucher and Kayodé Epiphane Nouetowa (Université de Rennes, France)

16:30
Construction of New Codes Over F_{16} From Cyclic Codes Over $M_4(F_4+uF_2+u^2F_2)$
Soham Ravikant Joshi (Indian Institute of Technology, Patna, India); Shikha Patel (Indian Institute of Science, Bengaluru, India); Om Prakash (Indian Institute of Technology Patna, India)

16:50
Best Linear Wiretap Coset Codes Must Maximize Minimum Distance
Andrew Swain and Willie K Harrison (Brigham Young University, USA)

16:10 – 17:30
Codes and Bounds
Room: Michigan League - Room D

16:10
Capacity-Achieving Sparse Superposition Codes with Spatially Coupled VAMP Decoder
YuHao Liu, Teng Fu, Jie Fan, Panpan Niu, Chaowen Deng and Zhongyi Huang (Tsinghua University, China)

16:30

The Error Probability of Spatially Coupled Sparse Regression Codes Over Memoryless Channels

YuHao Liu (Tsinghua University, China); Yizhou Xu (EPFL, Switzerland); Hou TianQi (Theory Lab, Huawei, Hong Kong)

16:50

Extension of the Poltyrev Bound to Binary Memoryless Symmetric Channels

Tal Philosof, Ariel Doubchak and Amit Berman (Samsung, Israel); Uri Erez (Tel Aviv University, Israel)

17:10

Galaxy Codes: Advancing Achievability for Deterministic Identification via Gaussian Channels

Holger Boche (Technical University Munich, Germany); Christian Deppe (Technical University of Braunschweig, Germany); Safieh Mahmoodi and Golamreza Omidi (Isfahan University of Technology, Iran)

Technical Program: Tuesday, June 25, 2025

07:30 – 17:00
Registration Open
Room: Michigan League - Concourse

07:30 – 16:00
Exhibit Booths Open
Room: Michigan League - Ballroom

08:30 – 09:35
Plenary: Information Theory Inspired Deep Learning
Speaker: En-Hui Yang, University of Waterloo, Canada
Room: Michigan League - Lydia Mendelssohn Theatre

09:35 – 09:50
Moving Break

09:50 – 11:10
Session TU1
Building: Michigan League

09:50 – 11:10
Supervised Learning I
Room: Michigan League - Lydia Mendelssohn Theatre

09:50
Generalization and Informativeness of Weighted Conformal Risk Control Under Covariate Shift
Matteo Zecchin (King's College London, United Kingdom (Great Britain)); Fredrik Hellström (University College London, United Kingdom (Great Britain)); Sangwoo Park (King's College London, United Kingdom (Great Britain)); Shlomo (Shitz) Shamai (The Technion, Israel); Osvaldo Simeone (King's College London, United Kingdom (Great Britain))

10:10
Linearly Convergent Mixup Learning
Gakuto Obi, Ayato Saito, Yuto Sasaski and Tsuyoshi Kato (Gunma University, Japan)

10:30
Multi-View Representation Learning Regularizer With Gaussian-Product Mixture Prior
Milad Sefidgaran (Huawei Paris Research Center, France); Abdellatif Zaidi (Universite Gustave Eiffel, France)

10:50
Constructing Decision Trees From Data Streams
Hoa T Vu (San Diego State University, USA); Huy Pham (Hanoi University of Science and Technology, Vietnam); Hoang Ta (National University of Singapore, Singapore)

09:50 – 11:10
Quantum Codes and Mitigation
Room: Michigan League - Hussey

09:50
Reed-Muller Codes on CQ Channels via a New Correlation Bound for Quantum Observables
Avijit Mandal and Henry D Pfister (Duke University, USA)

10:10
Enhancing Quantum Expectation Values via Exponential Error Suppression and CVaR Optimization
Touheed Anwar Atif, Reuben Blake Tate and Stephan Eidenbenz (Los Alamos National Laboratory, USA)

10:30
Reed-Muller Codes for Quantum Pauli and Multiple Access Channels
Dina Abdelhadi and Colin Sandon (EPFL, Switzerland); Emmanuel Abbe (École Polytechnique Fédérale de Lausanne, Switzerland); Ruediger L Urbanke (EPFL, Switzerland)

10:50
Identifying Highly Distillable Entanglement in Pure States Using Multi-Armed Bandits
Jayaharish R (Indian Institute of Technology, Madras, India); K Bharati (Indian Institute of Technology Madras & Chennai, India); Krishna P Jagannathan (Indian Institute of Technology Madras, India)

09:50 – 11:10
Codes for Storage I
Room: Michigan League - Vandenburgh

09:50
Lower Bounds on the Sub-Packetization of Optimal-Access MSR Codes for Multiple-Node Repair
Lewen Wang, Zihao Zhang and Sihuang Hu (Shandong University, China)

10:10
New Piggybacking Codes for Efficient Repair of Single-Node and Double-Node Erasures
Zhengyi Jiang, Hao Shi and Zhongyi Huang (Tsinghua University, China); Bo Bai (Huawei Technologies Co., Ltd., Hong Kong); Gong Zhang (Huawei Technologies Co., Ltd., China); Hanxu Hou (Huawei Technology Limited Company, Hong Kong)

10:30
On the Theory of Z_m Linear Codes: the Z_m Linear Preparata and Goethals Codes for m>2
Luca G. Tallini (Università di Teramo, Italy); Bella Bose (Oregon State University, USA)

10:50
The Coverage Depth Problem in DNA Storage Over Small Alphabets
Matteo Bertuzzo and Alberto Ravagnani (Eindhoven University of Technology, The Netherlands); Eitan Yaakobi (Technion, Israel)

09:50 – 11:10
Topics in Information Theory and Statistics
Room: Michigan League - Koessler

09:50
Inferring Dynamic Delays Using a Sample Path Causal Measure
Sabrina Liu (Stanford University, USA); Todd Coleman (Stanford, USA)

10:10
Dual NUP Representations and Min-Maximization in Factor Graphs
Yun-Peng Li and Hans-Andrea Loeliger (ETH Zurich, Switzerland)

10:30
Covert Adversarial Actuators in Finite MDPs
Edoardo David Santi (Imperial College London, United Kingdom (Great Britain)); Gongpu Chen (The Chinese University of Hong Kong, Hong Kong); Deniz Gündüz (Imperial College London, United Kingdom (Great Britain)); Asaf Cohen (Ben-Gurion University of the Negev, Israel)

10:50
Twice-Universal Prediction in over-Parameterized Linear Regression
Anton Tchaplianka and Meir Feder (Tel Aviv University, Israel)

09:50 – 11:10
Network Coding II
Room: Michigan League - Michigan

09:50
Noise Capacity of Conditional Disclosure of Secrets: a Graph-Theoretic Perspective
Zhou Li and Siyan Qin (Guangxi University, China); Xiang Zhang (Technical University of Berlin, Germany); Jihao Fan (School of Computer Science and Engineering, Southeast University & Nanjing Institute of Technology, China); Haiqiang Chen (Guangxi University, China); Giuseppe Caire (Technische Universität Berlin, Germany)

10:10
Linear Function-Computing Secure Network Coding
Yang Bai and Xuan Guang (Nankai University, China); Raymond W. Yeung (The Chinese University of Hong Kong, Hong Kong)

10:30
Space Information Flow: Multiple Unicast in l_p^n
Sirui Liu and Zongpeng Li (Tsinghua University, China)

10:50
D2D Coded Caching Schemes for Multiaccess Networks with Combinatorial Access Topology
Rashid Ummer N T and B. Sundar Rajan (Indian Institute of Science, India)

09:50 – 11:10
Compression and Compressed Sensing
Room: Michigan League - Henderson

09:50
The Rate-Distortion Function for Sampled Cyclostationary Gaussian Processes With Memory and With Bounded Processing Delay
Zikun Tan (Ben-Gurion University of the Negev, Israel); Ron Dabora (Ben-Gurion University, Israel); H. Vincent Poor (Princeton University, USA)

10:10
Exploration-Exploitation Tradeoff in Universal Lossy Compression
Nir Weinberger (Technion, Israel); Ram Zamir (Tel Aviv University, Israel)

10:30
Sublinear-Time Support Recovery in One-Bit Compressed Sensing
Haodong Yang, Qiwen Zhu and Venkata Gandikota (Syracuse University, USA)

10:50
Sequential Interval Passing for Compressed Sensing
Salman Habib and Taejoon Kim (Arizona State University, USA); Remi A Chou (University of Texas at Arlington, USA)

09:50 – 11:10
Algebraic Codes II
Room: Michigan League - Room D

09:50
Trace Reconstruction of First-Order Reed-Muller Codewords Using Run Statistics
Shiv Pratap Singh Rathore and Navin Kashyap (Indian Institute of Science, India)

10:10
Bivariate Linear Operator Codes
Vadim Zaripov (Harvard College, USA); Aaron Putterman (Harvard University, USA)

10:30
Hierarchy of Pseudo-Random Array Codes
Tuvi Etzion (Technion-Israel Institute of Technology, Israel); Yeow Meng Chee and Huimin Lao (National University of Singapore, Singapore)

10:50
A Fast Chinese Remaindering Transform Over Finite Fields
Chao Chen (Xidian University, China); Sian-Jheng Lin (Huawei Technology Co. Ltd., Hong Kong); Yunghsiang Sam Han (University of Electronic Science and Technology of China, China); Baoming Bai (Xidian University, China)

09:50 – 17:30
Quantum Information: Open Problems, Impact, and Challenges (Q-PIC) Workshop
Room: Rackham Graduate School - Amphitheater

10:00
Opening Remarks

10:15
Quantum Information
Saikat Guha (University of Maryland, USA)

10:45
Quantum Hypothesis Testing Lemma for Deterministic Identification over Quantum Channels
Pau Colomer (Technical University of Munich, Germany); Holger Boche (Technical University Munich, Germany); Andreas Winter (University of Cologne & ICREA, Germany)

11:10
Coffee Break

11:30
Quantum PUF Based Secret Key Generation and Secure Storage with Side Information
Kumar Nilesh (Technical University of Munich, Germany); Christian Deppe (Technical University of Braunschweig, Germany); Holger Boche (Technical University Munich, Germany)

11:45
Discussion: Physical Unclonable Functions

12:00
Lightning Talks - Poster Presentations

Covert Entanglement Generation over Bosonic Channels
Evan J.D. Anderson (University of Arizona, USA)

Clock Synchronization over Fiber with SPDC Source
Michael S. Bullock (University of Arizona, USA)

Enhanced Min-Sum Decoding of Quantum Codes with Iteration Dynamics Memory
Dimitrios Chytas (University of Arizona, USA)

Developing a Quantum Counterpart of Deterministic Identification
Pau Colomer (Technical University of Munich, Germany)

Entanglement-Assisted Communication
Jonas Hawellek (Technical University Braunschweig, Germany)

Perspectives on Degeneracy and Structure in Non-Binary LDPC Code-Based QEC
Kenta Kasai (Institute of Science Tokyo, Japan)

Secret Key Generation and Secure Storage with Identification Using Fully Quantum PUF
Kumar Nilesh (Technical University of Munich, Germany)

Reed-Muller Codes and the Holevo Capac*ity*
Avijit Mandal (Duke University, USA)

Quantum Identification with Entanglement Assistance
Johannes Rosenberger (Technical University of Munich, Germany)

Capacity Formulas for the Lossy Bosonic Compound Wiretap Channel
Florian Seitz (Technical University of Munich, Germany)

Fast Convergence Using Metric-Based Quantum Optimization Algorithm
Mohammad Aamir Sohail (University of Michigan, USA)

The Performance of Long Quantum LDPC Codes Based on the Hypergraph Product
Hanwen Yao (Duke University, USA)

Covert Communication and Key Generation Over Quantum State-Dependent Channels
Hassan ZivariFard (Columbia University, USA)

12:10
Lunch

13:30
Secure Quantum Token Processing
Gregor Pieplow (Humboldt University Berlin, Germany)

14:00
Single-mode Phase Estimation: Quantum Limits and Optimal Measurements
Jacob A Trzaska and Amit Ashok (University of Arizona, USA)

14:15
Discussion: PIC in Quantum Authentication

14:30
Spatially-Coupled QLDPC Codes
Robert Calderbank (Duke University, USA)

15:00
Feynman Meets Turing: The Uncomputability of Quantum Gate-Circuit Emulation and Concatenation
Holger Boche (Technical University Munich, Germany)

15:30
Discussion: PIC in Quantum Computing

15:50
Coffee Break

16:10
Towards the Quantum Internet
Marc Geitz (Deutsche Telekom AG, Berlin, Germany)

16:40
Distribution of Entanglement in NYC
Mehdi Namazi (Quconn, New York, USA)

17:10
Panel: Quantum Technology Challenges

11:10 – 11:30
Coffee Break
Room: Michigan League - Ballroom

11:30 – 12:50
Session TU2
Building: Michigan League

11:30 – 12:50
Supervised Learning II
Room: Michigan League - Lydia Mendelssohn Theatre

11:30
Learning and Generalization With Mixture Data
Harsh Vardhan (University of California San Diego, USA); Avishek Ghosh (Indian Institute of Technology, Bombay, India); Arya Mazumdar (University of California, San Diego, USA)

11:50
On Logistic Regression and Maximum Entropy Approaches
Narayana Prasad Santhanam (University of Hawaii at Manoa, USA); Yixin Zhang (University of Hawaii, USA)

12:10
Ensemble Mirror Descent: a Generalization of Mirror Descent to Multiple Convex Potentials
Nithin Varma Kanumuri (Caltech, USA); Babak Hassibi (California Institute of Technology, USA)

12:30
Constrained Universal Learning Under Misspecification
Shlomi Vituri (Tel-Aviv University, Israel); Meir Feder (Tel Aviv University, Israel)

11:30 – 12:50
Quantum Hypothesis Testing
Room: Michigan League - Hussey

11:30
Converse Bounds for Quantum Hypothesis Exclusion: a Divergence-Radius Approach
Kaiyuan Ji (Cornell University, USA); Hemant K. Mishra (IIT (ISM) Dhanbad, India); Milan Mosonyi (Universitat Autónoma de Barcelona, Spain); Mark M Wilde (Cornell University, USA)

11:50
Distributed Quantum Hypothesis Testing Against Product States Under Zero-Rate Communication Constraints
Sreejith Sreekumar (CentraleSupélec, France); Mario Berta (RWTH Aachen University, Germany & Imperial College London, United Kingdom (Great Britain)); Christoph Hirche (Leibniz Universität Hannover, Germany); Hao-Chung Cheng (National Taiwan University, Taiwan)

12:10
State and Measurement Design for Quantum Detection Over Quantum Channels
Jeremy Johnston and Xiaodong Wang (Columbia University, USA)

12:30
A Solution of the Generalised Quantum Stein's Lemma
Ludovico Lami (Scuola Normale Superiore, Italy)

11:30 – 12:50
DNA Storage I
Room: Michigan League - Vandenburgh

11:30
Complex DNA Synthesis Sequences
Boaz Moav (Technion - Israel Institute of Technology, Israel); Eitan Yaakobi (Technion, Israel); Ryan Gabrys (Naval Information Warfare Center Pacific, USA)

11:50
Single Edit Error-Correcting DNA Codes with Multiple Biological and Combinatorial Constraints: an Algebraic Approach
Krishna Gopal Benerjee (Indian Institute of Technology Kanpur, India); Adrish Banerjee (Indian Institute of Technology, Kanpur, India)

12:10
Coding for Ordered Composite DNA Sequences
Besart Dollma (Technion - Israel Institute of Technology, Israel); Ohad Elishco (Ben-Gurion University of the Negev, Israel); Eitan Yaakobi (Technion, Israel)

12:30
Sequence Reconstruction Over Coloring Channels for Protein Identification
Jessica Bariffi (Technical University of Munich, Germany); Antonia Wachter-Zeh (Technical University of Munich (TUM), Germany); Eitan Yaakobi (Technion, Israel)

11:30 – 12:50
Hypothesis Testing II
Room: Michigan League - Koessler

11:30
Distributed Multiple Testing With False Discovery Rate Control in the Presence of Byzantines
Daofu Zhang (University of Utah, USA); Mehrdad Pournaderi (University at Buffalo SUNY, USA); Yu Xiang (University of Utah, USA); Pramod Varshney (Syracuse University, USA)

11:50
Active Sampling for Markov Hypothesis Testing
Greg A Fields (UC San Diego, USA); Tara Javidi (UCSD, USA)
12:10
The Generalized Chernoff-Stein Lemma, Applications and Examples
Ibrahim Abou-Faycal, Jihad Fahs and Ibrahim Issa (American University of Beirut, Lebanon)

12:30
Adaptive 3-Stage Procedures for Multi-Hypothesis Testing
Yiming Xing (Tongji University, China); Georgios Fellouris (University of Illinois at Urbana-Champaign, USA)

11:30 – 12:50
Information (In)Equalities
Room: Michigan League - Michigan

11:30
A Dimensional Improvement of the Entropy Power Inequality Under Marginal Assumptions
Matthieu Fradelizi (Univ Gustave Eiffel, France); Lampros Gavalakis (University of Cambridge, United Kingdom (Great Britain)); Martin Rapaport (Carnegie Mellon University, USA)

11:50
Fractional Subadditivity of Submodular Functions: Equality Conditions and Their Applications
Gunank Jakhar, Gowtham R. Kurri and Suryajith Chillara (International Institute of Information Technology, Hyderabad, India); Vinod M Prabhakaran (Tata Institute of Fundamental Research, India)

12:10
A Generalized Cramér-Rao Bound Using Information Geometry
Satyajit Dhadumia and Ashok Kumar M. (Indian Institute of Technology Palakkad, India)

12:30
Tensorization of f-Divergences
Christian Rodrigo Cruz Flores (Harvard University, USA); Mario Diaz (Universidad Nacional Autónoma de México, Mexico); Flavio P Calmon (Harvard University, USA)

11:30 – 12:50
Codes for Storage II
Room: Michigan League - Henderson

11:30
Noise Recycling Based Multi-Level Flash Memory
Gilli Horowitz Hadayo (Technion - Israel Institute of Technology, Israel); Yuval Cassuto and Alejandro Cohen (Technion, Israel)

11:50
Near Optimal Code Construction for the Adversarial Torn Paper Channel with Edit Errors
Maria Abu Sini (Technical University of Munich, Germany); Reinhard Heckel (TU München, Germany)

12:10
A Multi-Node Repair Scheme of Reed-Solomon Codes
Yumeng Yang, Han Cai and Xiaohu Tang (Southwest Jiaotong University, China)

12:30
Design of Storage Codes Based on Integer Arithmetic Modulo a Power of Two
Kenneth W. Shum, Zhihang Deng and Yongyi Li (The Chinese University of Hong Kong, Shenzhen, China); Ruizhe Wang (ETH Zurich, Switzerland)

11:30 – 12:50
Network Coding III
Room: Michigan League – Room D

11:30
On the Optimality of All-to-All Broadcast Over Cache-Aided Ring Networks
Zhenhao Huang (ShanghaiTech University, China); Minquan Cheng (Guangxi Normal University, China); Qifu T Sun (University of Science and Technology Beijing, China); Youlong Wu (ShanghaiTech University, China)

11:50

A New Construction Structure on Coded Caching With Linear Subpacketization: Non-Half-Sum Disjoint Packing

Minquan Cheng (Guangxi Normal University, China); Wei (GuangXi Normal University, China); Kai Wan (Huazhong University of Science and Technology, China); Giuseppe Caire (Technische Universität Berlin, Germany)

12:10

A Framework of Constructing PDA via Union of Cache Configurations From Cartesian Product

Jinyu Wang (Guangxi Normal University, Guilin, China); Minquan Cheng (Guangxi Normal University, China); Kai Wan (Huazhong University of Science and Technology, China); Giuseppe Caire (Technische Universität Berlin, Germany)

12:30

Hierarchical Coded Caching in High Memory Regime With Coded Placement

Rajlaxmi Pandey (Indian Institute of Science, Bangalore, India); Charul Rajput (Aalto University, Finland); B. Sundar Rajan (Indian Institute of Science, India)

12:50 – 14:30
Lunch
Room: Michigan League - Ballroom

13:00 – 14:20
Social Event: WITHITS and Networking
Room: Michigan League - Ballroom

14:30 – 15:50
Session TU3
Building: Michigan League

14:30 – 15:50
Bandits I
Room: Michigan League - Lydia Mendelssohn Theatre

14:30

A General Framework for Clustering and Distribution Matching With Bandit Feedback

Recep Can Yavas, Yuqi Huang, Vincent Y. F. Tan and Jonathan Scarlett (National University of Singapore, Singapore)

14:50

Minimizing Queue Length Regret for Arbitrarily Varying Channels

G Krishnakumar (Indian Institute of Technology Madras, India); Abhishek Sinha (Tata Institute of Fundamental Research, India)

15:10

A Unified Regularization Approach to High-Dimensional Generalized Tensor Bandits

Jiannan Li, Yiyang Yang and Yao Wang (Xi'an Jiaotong University, China); Shaojie Tang (University at Buffalo, USA)

15:30

Does Feedback Help in Bandits with Arm Erasures?

Merve Karakas, Osama Hanna, Lin Yang and Christina Fragouli (UCLA, USA)

14:30 – 15:50
Private Information Retrieval I
Room: Michigan League - Hussey

14:30

Private Information Retrieval on Multigraph-Based Replicated Storage

Shreya Meel (University of Maryland, College Park, USA); Xiangliang Kong (Tel-Aviv University, Israel); Thomas Jacob Maranzatto (University of Maryland, USA); Itzhak Tamo (Tel Aviv University, Israel); Sennur Ulukus (University of Maryland, USA)

14:50
A Linear Programming Approach to Private Information Retrieval
Anoosheh Heidarzadeh (Santa Clara University, USA); Ningze Wang and Alex Sprintson (Texas A&M University, USA)

15:10
The Asymptotic Capacity of Byzantine Symmetric Private Information Retrieval and Its Consequences
Mohamed Nomeir, Alptug Aytekin and Sennur Ulukus (University of Maryland, USA)

15:30
Optimizing Leaky Private Information Retrieval Codes to Achieve O(log K) Leakage Ratio Exponent
Wenyuan Zhao, Yu-Shin Huang, Chao Tian and Alex Sprintson (Texas A&M University, USA)

14:30 – 15:50
DNA Storage II
Room: Michigan League - Vandenburgh

14:30
Constrained Coding for Composite DNA: Channel Capacity and Efficient Constructions
Thanh Tuan Nguyen (Singapore University of Technology and Design, Singapore); Chen Wang (Shandong University, China); Kui Cai (Singapore University of Technology and Design, Singapore); Yiwei Zhang (Shandong University, China); Zoar Yakhini (IDC, Israel)

14:50
Correcting Multiple Substitutions in Nanopore-Sequencing Reads
Anisha Banerjee (Technical University of Munich (TUM), Germany); Yonatan Yehezkeally (Newcastle University, United Kingdom (Great Britain)); Antonia Wachter-Zeh (Technical University of Munich (TUM), Germany); Eitan Yaakobi (Technion, Israel)

15:10
Generalized Orthogonal de Bruijn Sequences
Yuan-Pon Chen and Jin Sima (University of Illinois Urbana-Champaign, USA); Olgica Milenkovic (University of Illinois at Urbana-Champaign (UIUC), USA)

15:30
Constrained Error-Correcting Codes for Efficient DNA Synthesis
Yajuan Liu and Tolga M Duman (Bilkent University, Turkey)

14:30 – 15:50
Quantum Shannon Theory III
Room: Michigan League - Koessler

14:30
Improved Upper Bound on Multiterminal Entanglement Distillation
Sagnik Bhattacharya (University of Maryland, USA)

14:50
When Wyner and Ziv Met Bayes in Quantum-Classical Realm
Mohammad Aamir Sohail (University of Michigan, USA); Touheed Anwar Atif (Los Alamos National Laboratory, USA); S. Sandeep Pradhan (University of Michigan, USA)

15:10
Capacities of Entanglement Distribution From a Central Source
Xinan Chen (University of Illinois at Urbana-Champaign, USA); Stefano Chessa (University of Illinois Urbana-Champaign, USA); Ian George (National University of Singapore, Singapore); Felix Leditzky and Eric Chitambar (University of Illinois Urbana-Champaign, USA)

14:30 – 15:50
Decision Theory
Room: Michigan League - Michigan

14:30
Community Detection for Contextual-LSBM: Theoretical Limitations of Misclassification Rate and Efficient Algorithms
Dian Jin (Rutgers University, USA); Yuqian Zhang (Rutgers, USA); Qiaosheng Zhang (Shanghai Artificial Intelligence Laboratory, China)

14:50
Mean Estimation in High-Dimensional Binary Time-Inhomogeneous Markov Gaussian Mixture Models
Abd El Latif Kadry (Technion - Israel Institute of Technology, Israel); Yihan Zhang (IST Austria, Austria); Nir Weinberger (Technion, Israel)

15:10
On the Optimal Second-Order Convergence Rate of Minimax Estimation Under Weighted MSE
Tianren Peng (Tsinghua University, China); Qi Li (China); Shao-Lun Huang (Tsinghua-Berkeley Shenzhen Institute, China)

15:30
On the Lower Bound of Minimax Error for Crowdsourcing
Zhuqing Li (University of California San Diego, USA); Soheil Mohajer (University of Minnesota, USA); Behrouz Touri (University of California San Diego, USA)

14:30 – 15:50
Coded Computation III
Room: Michigan League - Henderson

14:30
Improved Bounds on Access-Redundancy Tradeoffs in Quantized Linear Computations
Ching-Fang Li and Mary Wootters (Stanford University, USA)

15:30
Non-Linear Function Computation Broadcast
Mohamad Reza Deylam salehi (Eurecom, France & Sorbonne University, France); Vijith kumar Kizhakke Purakkal (Eurecom, France); Derya Malak (EURECOM, France)

15:10
General Coded Computing in a Probabilistic Straggler Regime
Parsa Moradi (University of Minnesota, Twin Cities, USA); Mohammad Ali Maddah-Ali (University of Minnesota, USA)

15:30
General Coded Computing: Adversarial Settings
Parsa Moradi (University of Minnesota, Twin Cities, USA); Hanzaleh Akbari Nodehi and Mohammad Ali Maddah-Ali (University of Minnesota, USA)

14:30 – 15:50
Graph Theory
Room: Michigan League – Room D

14:30
Spectral Recovery in the Labeled SBM
Julia Gaudio (Northwestern University, USA); Heming Liu (University of Illinois, USA)

14:50
Fragmentation in Data Deduplication Systems II: the Jump Metric
YunHan Li (UIUC, USA); Olgica Milenkovic (University of Illinois at Urbana-Champaign (UIUC), USA); Ilan Shomorony (University of Illinois at Urbana-Champaign, USA); Jin Sima (University of Illinois Urbana-Champaign, USA)

15:10
Non-Center-Based Clustering Under Bilu-Linial Stability
Xing Gao and Lev Reyzin (University of Illinois Chicago, USA)

15:30
On the Information-Theoretic Limit of Subgraph Alignment
Chun Hei Michael Shiu (University of British Columbia, Canada); Hei Victor Cheng (Aarhus University, Denmark); Lele Wang (University of British Columbia, Canada)

15:50 – 16:10
Coffee Break
Room: Michigan League - Ballroom

16:10 – 17:30
Session TU4
Building: Michigan League

16:10 – 17:30
Bandits II
Room: Michigan League - Lydia Mendelssohn Theatre

16:10
Online Clustering With Bandit Information
Dhinesh Chandran G (IIT - Madras, India); Srinivas Reddy Kota and Srikrishna Bhashyam (Indian Institute of Technology Madras, India)

16:30
The Safety-Privacy Tradeoff in Linear Bandits
Arghavan Zibaie, Spencer Hutchinson, Ramtin Pedarsani and Mahnoosh Alizadeh (University of California, Santa Barbara, USA)

16:50
Collaborative Preference Learning
Tal Marko Kravarusic (Tel Aviv University, Israel); Soumyabrata Pal (Google Research, India); Wasim Huleihel (Tel Aviv University, Israel)

17:10
Refined PAC-Bayes Bounds for Offline Bandits
Amaury Gouverneur (KTH, Sweden); Tobias J. Oechtering and Mikael Skoglund (KTH Royal Institute of Technology, Sweden)

16:10 – 17:30
Rate-Distortion-Perception
Room: Michigan League - Hussey

16:10
The Rate-Distortion-Perception Trade-off with Algorithmic Realism
Yassine Hamdi (Imperial College London, United Kingdom (Great Britain)); Aaron Wagner (Cornell University, USA); Deniz Gündüz (Imperial College London, United Kingdom (Great Britain))

16:30
Rate-Distortion-Perception Function of Bernoulli Vector Sources
Praneeth Kumar Vippathalla, Mihai-Alin Badiu and Justin P Coon (University of Oxford, United Kingdom (Great Britain))

16:50
On the Rate-Distortion-Perception Function for Gaussian Processes
Giuseppe Serra (EURECOM, France & Sorbonne Université, France); Photios A. Stavrou (EURECOM, France); Marios Kountouris (University of Granada, Spain & EURECOM, France)

17:10
Source-Channel Separation Theorems for Distortion Perception Coding
Chao Tian (Texas A&M University, USA); Jun Chen (McMaster University, Canada); Krishna Narayanan (Texas A&M University, USA)

16:10 – 17:30
DNA Storage III
Room: Michigan League - Vandenburgh

16:10
Error-Correcting Codes for Labeled DNA Sequences
Dganit Hanania and Eitan Yaakobi (Technion, Israel)

16:30
Coding for Strand Breaks in Composite DNA
Frederik Walter (Technical University of Munich, Germany); Yonatan Yehezkeally (Newcastle University, United Kingdom (Great Britain))

16:50
On the Reliability of Information Retrieval From MDS Coded Data in DNA Storage
Serge Kas Hanna (CNRS & Côte d'Azur University & Côte d'Azur University, France)

17:10
Coded String Reconstruction from Erroneous Prefix-Suffix Compositions
Zitan Chen (CUHK-Shenzhen, China)

16:10 – 17:30
Quantum Entropies and Information Measures
Room: Michigan League - Koessler

16:10 Quantum Entropy Prover
Shao-Lun Huang and Tobias Rippchen (RWTH Aachen University, Germany); Mario Berta (RWTH Aachen University, Germany & Imperial College London, United Kingdom (Great Britain))

16:30
Reverse-Type Data Processing Inequality
Paula Belzig (University of Waterloo, Canada); Li Gao (Wuhan University, China); Graeme Smith (University of Colorado Bolder, USA); Peixue Wu (University of Waterloo, Canada)

16:50
The Rate of Information Destruction and f-Divergence Pinsker Inequalities
Ian George (National University of Singapore, Singapore); Alice Zheng and Akshay Bansal (Virginia Polytechnic Institute and State University, USA)

17:10
Tight Relations and Equivalences Between Smooth Relative Entropies
Bartosz Regula (RIKEN, Japan); Ludovico Lami (Scuola Normale Superiore, Italy); Nilanjana Datta (Cambridge, United Kingdom (Great Britain))

16:10 – 17:30
Compression and Estimation
Room: Michigan League - Michigan

16:10
Risk-Aware Estimation From Compressed Data Beyond the Bayes Risk
Malcolm Egan (INRIA, France)

16:30
Lossy Source Coding With Focal Loss
Alex Dytso (Qualcomm Inc., USA); Martina Cardone (University of Minnesota, USA)

16:50

Multi-Terminal Remote Generation and Estimation Over a Broadcast Channel With Correlated Priors

Maximilian Egger and Rawad Bitar (Technical University of Munich, Germany); Antonia Wachter-Zeh (Technical University of Munich (TUM), Germany); Nir Weinberger (Technion, Israel); Deniz Gündüz (Imperial College London, United Kingdom (Great Britain))

17:10

Remote Online Estimation of the Wiener Process: a Preprocessing Method to Ensure Distortion Convergence

Yifan Feng and Zhengchuan Chen (Chongqing University, China); Mehul Motani (National University of Singapore, Singapore); Howard Yang (Zhejiang University, China & University of Illinois at Urbana Champaign (UIUC), USA); Min Wang (Chongqing University of Posts and Telecommunications, China); Tony Q. S. Quek (Singapore University of Technology and Design, Singapore)

16:10 – 17:30
Coded Computation IV
Room: Michigan League - Henderson

16:10

Constructions of Analog Error-Correcting Codes for Single-Error Detection and Correction with Efficient Decoding Algorithm

Zhengyi Jiang and Hao Shi (Tsinghua University, China); Bo Bai (Huawei Technologies Co., Ltd., Hong Kong); Zhongyi Huang (Tsinghua University, China); Gong Zhang (Huawei Technologies Co., Ltd., China); Hanxu Hou (Huawei Technology Limited Company, Hong Kong)

16:30

Uncoded Download in Lagrange-Coded Elastic Computing With Straggler Tolerance

Xi Zhong (University of Florida, USA); Samuel Lu (University of Utah, USA); Joerg Kliewer (New Jersey Institute of Technology, USA); Mingyue Ji (University of Florida, USA)

16:50

Individual Confidential Computing of Polynomials Over Non-Uniform Information

Saar Tarnopolsky (Electrical and Computer Engineering Technion, Israel); Zirui Deng (Washington University in St. Louis, USA); Vinayak Ramkumar (Tel Aviv University, Israel); Netanel Raviv (Washington University in Saint Louis, USA); Alejandro Cohen (Technion, Israel)

17:10

Quantizing for Noisy Flash Memory Channels

Juyun Oh (POSTECH, Korea (South)); Taewoo Park (Pohang University of Science and Technology (POSTECH), Korea (South)); Jiwoong Im (POSTECH, Korea (South)); Yuval Cassuto (Technion, Israel); Yongjune Kim (Pohang University of Science and Technology (POSTECH), Korea (South))

16:10 – 17:30
Constrained Capacity
Room: Michigan League – Room D

16:10

An Upper Bound on the Capacity of Bandlimited LTI AWGN Channels Subject to Peak-Amplitude Constraint

Idan Tzachy (Technion - Israel Institute of Technology, Israel); Ron Dabora (Ben-Gurion University, Israel); Shlomo (Shitz) Shamai (The Technion, Israel)

16:30

MISO Wireless Optical Communication Under a First-Moment and a Peak-Power Constraint: Theoretical and Practical Aspects

Jordan Hong (ETH Zurich, Switzerland); Stefan M. Moser (ETH Zurich, Switzerland & National Yang Ming Chiao Tung University (NYCU), Taiwan)

16:50

Channel Coding for Gaussian Channels With Mean and Variance Constraints

Adeel Mahmood and Aaron Wagner (Cornell University, USA)

17:10

Capacity-Achieving Input Distribution of the Additive Uniform Noise Channel With Peak Amplitude and Cost Constraint

Jonas Stapmanns, Catarina Dias, Luke Eilers and Jean-Pascal Pfister (Bern University, Switzerland)

17:30 – 17:45
Moving Break
Room: Michigan League - Ballroom

17:45 – 18:45
Award Session
Room: Michigan League - Lydia Mendelssohn Theatre

18:45 – 20:45
Award Reception
Room: Michigan League – Ballroom & Concourse

Technical Program: Wednesday, June 25, 2025

07:30 – 17:00
Registration Open
Room: Michigan League - Concourse

07:30 – 16:00
Exhibits Open
Room: Michigan League - Ballroom

08:30 – 09:35
Plenary: Learning in Strategic Queuing
Speaker: Eva Tardos, Cornell University, USA
Room: Michigan League - Lydia Mendelssohn Theatre

09:35 – 09:50
Moving Break

09:50 – 11:10
Session WE1
Building: Michigan League

09:50 – 11:10
Generative Models I
Room: Michigan League - Lydia Mendelssohn Theatre

09:50
Conditional Mutual Information Based Diffusion Posterior Sampling for Solving Inverse Problems
Shayan Mohajer Hamidi (Stanford University, USA); En-hui Yang (University of Waterloo, Canada)

10:10
Score-Based Manifold Projection for Diffusion-Based Inverse Problems
Shayan Mohajer Hamidi (Stanford University, USA); En-hui Yang (University of Waterloo, Canada)

10:30
Generalized Score Matching: Bridging f-Divergence and Statistical Estimation Under Correlated Noise
Yirong Shen (Imperial College London, United Kingdom (Great Britain)); Lu Gan (Brunel University, United Kingdom (Great Britain)); Cong Ling (Imperial College London, United Kingdom (Great Britain))

10:50
Analysis of Diffusion Models for Manifold Data
Anand Jerry George, Rodrigo Veiga and Nicolas Macris (EPFL, Switzerland)

09:50 – 11:10
Secure Multiparty Computation
Room: Michigan League - Hussey

09:50
An Improved Lower Bound on Oblivious Transfer Capacity Using Polarization and Interaction
So Suda and Shun Watanabe (Tokyo University of Agriculture and Technology, Japan)

10:10
Vector Linear Secure Aggregation
Xihang Yuan and Hua Sun (University of North Texas, USA)

10:30
On the Context-Hiding Property of Shamir-Based Homomorphic Secret Sharing
Shuai Feng (ShanghaiTech University, China); Liang Feng Zhang (ShanghaiTech, China)

10:50
On the Optimal Source Key Size of Secure Gradient Coding
Yang Zhou, Wenbo Huang, Kai Wan and Robert C. Qiu (Huazhong University of Science and Technology, China)

09:50 – 11:10
Repair Codes I
Room: Michigan League - Vandenburgh

09:50
Amortized Locally Decodable Codes
Jeremiah Blocki and Justin Zhang (Purdue University, USA)

10:10
Griesmer-Optimal Locally Repairable Codes via Lengthening Reed-Muller Codes
Yuan Gao and Weijun Fang (Shandong University, China)

10:30
On Linear Field Size Access-Optimal MDS Convertible Codes
Nikhil Krishnan Muralee Krishnan (Indian Institute of Technology Palakkad, India); Myna Vajha (Indian Institute of Technology, Hyderabad, India); Vinayak Ramkumar (Tel Aviv University, Israel); Gopisetty Yeswanth Sai (Indian Institute of Technology-Palakkad, India); Xiangliang Kong (Tel-Aviv University, Israel)

10:50
Fragmentation in Data Deduplication Systems I: the Stretch Metric
YunHan Li (UIUC, USA); Olgica Milenkovic (University of Illinois at Urbana-Champaign (UIUC), USA); Ilan Shomorony (University of Illinois at Urbana-Champaign, USA); Jin Sima (University of Illinois Urbana-Champaign, USA)

09:50 – 11:10
Estimation and Prediction I
Room: Michigan League - Koessler

09:50
An Analysis of Plug-in and Bias-Corrected Fixed-k Nearest Neighbor Density Functional Estimators
Wesley A Suttle (DEVCOM Army Research Laboratory & US Army Research Laboratory, USA)

10:10
Strong Antithetic Variance Reduction Inequalities
Abolfazl Hashemi, Dongmin Lee and Anuran Makur (Purdue University, USA)

10:30
Asymptotics of Spiked Covariance Model With Random Projection
Zeyan Zhuang, Xin Zhang, Dongfang Xu and Shenghui Song (The Hong Kong University of Science and Technology, Hong Kong)

10:50
Achieving Oracle Rate for Large Covariance Matrix Estimation From Quadratic Measurements
Wenbin Wang and Ziping Zhao (ShanghaiTech University, China)

09:50 – 11:10
Lossless Source Coding
Room: Michigan League - Michigan

09:50
A Lower Bound of Worst-Case Redundancy of k-Symbol Delay Decodable Codes
Kengo Hashimoto and Ken-ichi Iwata (University of Fukui, Japan)

10:10
Graph Compression With Side Information at the Decoder
Praneeth Kumar Vippathalla, Mihai-Alin Badiu and Justin P Coon (University of Oxford, United Kingdom (Great Britain))

10:30
A Simple Low Complexity Locally Private Compression Scheme
Sidharth Jaggi (University of Bristol, United Kingdom (Great Britain)); Shashank Vatedka (Indian Institute of Technology Hyderabad, India); Venkat Chandar (D. E. Shaw, USA); Aslan Tchamkerten (Telecom ParisTech, France)

10:50
Binary BMST Coding for Near-Lossless Compression of Q-Ary Source
Xiao Ma and Yinchu Wang (Sun Yat-sen University, China); Qianli Ma (Macau University of Science and Technology, Macao); Zhaohao Mo and Xiangping Zheng (Sun Yat-sen University, China)

09:50 – 11:10
Multi-hop Networks
Room: Michigan League - Henderson

09:50
Blank Space: Adaptive Causal Coding for Streaming Communications over Multi-Hop Networks
Adina Waxman (Technion - Israel Institute of Technology, Israel); Shai Ginzach (Rafael Ltd., Israel); Aviel Glam (Rafael Advance Defense Systems Ltd., Israel); Alejandro Cohen (Technion, Israel)

10:10
Broadcasting With Port Constraints
Zhaohong Lu (Virginia Tech, USA); Qingyu Liu (Peking University, China); Haibo Zeng (Virginia Tech, USA)

10:30
Modulo Quantization Coding for Gaussian Primitive Relay Channel With Perfectly Correlated Noises
Yuanxin Guo, Stark Draper and Wei Yu (University of Toronto, Canada)

10:50
Stochastic Consensus-Testing in Relay Networks
Johannes Rosenberger (Technical University of Munich, Germany); Holger Boche (Technical University Munich, Germany); Juan A. Cabrera (Technische Universität Dresden, Germany); Christian Deppe (Technical University of Braunschweig, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

09:50 – 11:10
Insertion and Deletion Codes I
Room: Michigan League – Room D

09:50
Sequence Reconstruction for the Single-Deletion Single-Substitution Channel
Wentu Song, Kui Cai and Tony Q. S. Quek (Singapore University of Technology and Design, Singapore)

10:10
Reed-Solomon Codes Against Insertions and Deletions: Full-Length and Rate-1/2 Codes
Peter Beelen (Technical University of Denmark, Denmark); Roni Con (Technion, Israel); Anina Gruica (Eindhoven University of Technology, The Netherlands); Maria Montanucci (Technical University of Denmark, Denmark); Eitan Yaakobi (Technion, Israel)

10:30
Improved Constructions of Linear Codes for Insertions and Deletions
Roee Gross (Technion-Israel Institute of Technology, Israel); Roni Con and Eitan Yaakobi (Technion, Israel)

10:50
Channels With Input-Correlated Synchronization Errors
Roni Con (Technion, Israel); João Ribeiro (Instituto Superior Técnico - Universidade de Lisboa, Portugal & Instituto de Telecomunicações, Portugal)

11:10 – 11:30
Coffee Break
Room: Michigan League - Ballroom

11:30 – 12:50
Session WE2
Building: Michigan League

11:30 – 12:50
Generative Models II
Room: Michigan League - Lydia Mendelssohn Theatre

11:30
A Rate-Distortion Framework for Summarization
Enes Arda and Aylin Yener (The Ohio State University, USA)

11:50
Soft Best-of-n Sampling for Model Alignment
Claudio Mayrink Verdun and Alex Oesterling (Harvard University, USA); Himabindu Lakkaraju (Harvard Business School, USA); Flavio P Calmon (Harvard University, USA)

12:10
Information-Theoretic Proofs for Diffusion Sampling
Galen Reeves and Henry D Pfister (Duke University, USA)

12:30
In-Context Learning Based Efficient Spectrum Sensing
Renpu Liu (Pennsylvania State University, USA); Liwen Zhong (The Pennsylvania State University, USA); Wooram Lee (IBM Research, USA); Jing Yang (University of Virginia, USA)

11:30 – 12:50
Compression and Quantizers
Room: Michigan League - Hussey

11:30
Distributionally Robust Scalar Quantization Using the Wasserstein Distance
Vikrant Malik, Taylan Kargin, Victoria Kostina and Babak Hassibi (California Institute of Technology, USA)

11:50
Scalar Lattices and Probabilistic Shaping for Dithered Wyner-Ziv Quantization
Muhammed Yusuf Şener and Gerhard Kramer (Technical University of Munich, Germany); Shlomo (Shitz) Shamai (The Technion, Israel); Wen Xu (Huawei Technologies Duesseldorf GmbH & - European Research Center (ERC), Germany)

12:10
Optimal Quantization for Matrix Multiplication
Or Ordentlich (Hebrew University of Jerusalem, Israel); Yury Polyanskiy (MIT, USA)

12:30
High-Rate Nested-Lattice Quantized Matrix Multiplication With Small Lookup Tables
Iris Kaplan and Or Ordentlich (Hebrew University of Jerusalem, Israel)

11:30 – 12:50
Repair Codes II
Room: Michigan League - Vandenburgh

11:30
Shift-XOR Convertible Locally Repairable Codes
Leyang Xia and Shenghao Yang (The Chinese University of Hong Kong, Shenzhen, China); Ximing Fu (Harbin Institute of Technology, Shenzhen, China)

11:50
Secure Convertible Codes for Passive Eavesdroppers
Justin Zhang (Purdue University, USA); Rashmi Vinayak (Carnegie Mellon University & Google Inc, USA)

12:10
Chromatic Codes for Latency Optimal Geo-Distributed Storage
Srivathsa Acharya (Indian Institute of Science, India); P Vijay Kumar (Indian Institute of Science & University of Southern California, India); Viveck Cadambe (Georgia Institute of Technology, USA)

11:30 – 12:50
Emerging Applications
Room: Michigan League - Koessler

11:30
Unfolding FPLinQ with Graph Reinforcement Learning for D2D Spectrum Sharing
Zhiwei Shan (University of Liverpool, United Kingdom (Great Britain)); Xinping Yi (Southeast University, China); Chung-Shou Liao (National Tsing Hua University, Taiwan); Shi Jin (Southeast University, China); Giuseppe Caire (Technische Universität Berlin, Germany)

11:50
Authorship Identification: From Fundamental Limits to Practice
Willie K Harrison (Brigham Young University, USA); Aylin Yener (The Ohio State University, USA)

12:10
Robust Max Selection
Trung Dang and Zhiyi Huang (The University of Texas at Austin, USA)

12:30
Recoverable Systems as Interaction Models: a Study by Example
Geyang Wang and Alexander Barg (University of Maryland, USA); Navin Kashyap (Indian Institute of Science, India)

11:30 – 12:50
Coding and Detection
Room: Michigan League - Michigan

11:30
Optimal Bounded-Influence Procedure for Robust Sequential Change-Point Detection
Ruizhi Zhang (University of Georgia, USA)

11:50
On Partial Weight Distribution of Polar Codes
Vlad-Florin Dragoi (University of Arad (UAV), Romania & Normandy University, France); Mohammad Rowshan and Jinhong Yuan (University of New South Wales, Australia)

12:10
An Analytical Study of the Min-Sum Approximation for Polar Codes
Nir Chisnevski and Ido Tal (Technion, Israel); Shlomo (Shitz) Shamai (The Technion, Israel)

12:30
Neural Polar Decoders for Deletion Channels
Ziv Aharoni and Henry D Pfister (Duke University, USA)

11:30 – 12:50
Information Measures
Room: Michigan League - Henderson

11:30
On ϕ-Entropic Dependence Measures and Non-Local Correlations
Chenyu Wang and Amin Gohari (The Chinese University of Hong Kong, Hong Kong)

11:50
D2C-CID: Discrete-to-Continuous Common Information Dimension
Xinlin Li, Osama Hanna and Christina Fragouli (UCLA, USA); Suhas Diggavi (University of California, Los Angeles, USA)

12:10
Bounds on Maximal Leakage over Bayesian Networks
Anuran Makur and Japneet Singh (Purdue University, USA)

12:30
Discrete Layered Entropy, Conditional Compression and a Tighter Strong Functional Representation Lemma
Cheuk Ting Li (The Chinese University of Hong Kong, Hong Kong)

11:30 – 12:50
Insertion and Deletion Codes II
Room: Michigan League – Room D

11:30
Decoding Insertions/Deletions via List Recovery
Anisha Banerjee (Technical University of Munich (TUM), Germany); Roni Con (Technion, Israel); Antonia Wachter-Zeh (Technical University of Munich (TUM), Germany); Eitan Yaakobi (Technion, Israel)

11:50
A New Construction of Non-Binary Deletion Correcting Codes and Their Decoding
Michael Schaller and Beatrice Toesca (University of Zürich, Switzerland); Van Khu Vu (Singapore University of Technology and Design, Singapore)

12:10
Improved Interactive Protocol for Synchronizing From Deletions
Haolun Ni and Lev Tauz (University of California, Los Angeles, USA); Ryan Gabrys (Naval Information Warfare Center Pacific, USA); Lara Dolecek (UCLA, USA)

12:30
On Differential Varshamov-Tenengolts Codes
Nithish Suresh Babu (University of California San Diego, USA & Other, USA); Adi Krishnamoorthy (University of California, San Diego, USA); Ron M Roth (Technion, Israel); Paul H. Siegel (University of California, San Diego, USA)

13:00- 18:00
Quantum Hackathon Competition
Room: Michigan League - Ballroom

Technical Program: Thursday, June 26, 2025

07:30 – 16:30
Registration Open
Room: Michigan League - Concourse

07:30 – 16:00
Exhibits Open
Room: Michigan League - Ballroom

08:30 – 09:35
Shannon Lecture: Quantum Error Correcting Codes and Quantum Channel Capacities
Speaker: Peter Shor, Massachusetts Institute of Technology, USA
Room: Michigan League - Lydia Mendelssohn Theatre

09:35 – 09:50
Moving Break

09:50 – 11:10
Session TH1
Building: Michigan League

09:50 – 11:10
Wireless Communications
Room: Michigan League - Lydia Mendelssohn Theatre

09:50
Hybrid Beamforming Aided by Full-Dimension One-Bit Chains
Lina Liu and Dongning Guo (Northwestern University, USA)

10:10
A High-Resolution Analysis of Receiver Quantization in Communication
Jing Zhou (Shaoxing University, China); Shuqin Pang and Wenyi Zhang (University of Science and Technology of China, China)

10:30
Quantized Enumerative Sphere Shaping
Kristiyan Savov and Constantin Runge (Technical University of Munich, Germany)

10:50
Fundamental Limits for Iterated Function Optimization on Turing Machines
Holger Boche (Technical University Munich, Germany); Volker Pohl (Technische Universität München, Germany); H. Vincent Poor (Princeton University, USA)

09:50 – 11:10
Deep Learning
Room: Michigan League - Hussey

09:50
Deep Fusion: Capturing Dependencies in Contrastive Learning via Transformer Projection Heads
Huanran Li and Daniel Pimentel-Alarcón (University of Wisconsin-Madison, USA)

10:10
Coded Deep Learning: Framework and Preliminary Results
En-hui Yang (University of Waterloo, Canada); Shayan Mohajer Hamidi (Stanford University, USA)

10:30
Latent Union Completion
Karan Vikyath Veeranna Rupashree (Wisconsin Institute of Discovery, USA); Siddharth Baskar (Wisconsin Institute for Discovery, USA); Daniel Pimentel-Alarcón (University of Wisconsin-Madison, USA)

10:50
Embedding Empirical Distributions for Computing Optimal Transport Maps
Mingchen Jiang (Institute of Science Tokyo, Japan); Peng Xu (University of Illinois Urbana-Champaign, USA); Xichen Ye (Hong Kong Baptist University, Hong Kong); Xiaohui Chen (University of Southern California, USA); Yun Yang (University of Maryland, College Park, USA); Yifan Chen (Hong Kong Baptist University, Hong Kong)

09:50 – 11:10
Coding and Decoding
Room: Michigan League - Vandenburgh

09:50
Randomness-Efficient Constructions of Capacity-Achieving List-Decodable Codes
Jonathan Mosheiff (Ben-Gurion University, Israel); Nicolas Resch (University of Amsterdam, The Netherlands); Kuo Shang and Chen Yuan (Shanghai Jiao Tong University, China)

10:10
A Unified Approach and Solutions for n-Task Problems
Daiki Suruga (Nagoya University, Japan)

10:30
Optimal Binary Variable-Length Codes With a Bounded Number of 1's Per Codeword: Design, Analysis, and Applications
Roberto Bruno (University of Salerno, Italy); Roberto De Prisco (Università di Salerno, Italy); Ugo Vaccaro (University of Salerno, Italy)

10:50
Coupling Without Communication and Drafter-Invariant Speculative Decoding
Majid Daliri and Christopher Musco (New York University, USA); Ananda Theertha Suresh (Google, USA)

09:50 – 11:10
Lossy Source Coding
Room: Michigan League - Koessler

09:50
On Source Coding for Stationary Sources Under Logarithmic Loss
Oguzhan Kubilay Ulger and Elza Erkip (New York University, USA)

10:10
A Markov Property of Empirical Distributions and the Performance of Compression-Based Denoisers
Dan Song, Ayfer Özgür and Tsachy Weissman (Stanford University, USA)

10:30
On the Lossy Compression of Stable Sources
Karim Ezzeddine, Jihad Fahs and Ibrahim Abou-Faycal (American University of Beirut, Lebanon)

10:50
The Redundancy of Non-Singular Channel Simulation
Gergely Flamich (University of Cambridge, United Kingdom (Great Britain)); Sharang Mudlapura Sriramu and Aaron Wagner (Cornell University, USA)

09:50 – 11:10
Interference and Multiaccess Channels
Room: Michigan League - Michigan

09:50
Proof of a Conjecture on the Gaussian Signaling Region for the Gaussian Z-Interference Channel
Chandra Nair and Jinpei Zhao (The Chinese University of Hong Kong, Hong Kong)

10:10
Multi-Terminal Strong Coordination Over Noisy Channels With Encoder Cooperation
Viswanathan Ramachandran, Tobias J. Oechtering and Mikael Skoglund (KTH Royal Institute of Technology, Sweden)

10:30
An Achievability Bound for Type-Based Unsourced Multiple Access
Deekshith Pathayappilly Krishnan (Chalmers University of Technology, Gothenburg, Sweden); Kaan Okumus (Chalmers University of Technology, Sweden); Khac-Hoang Ngo (Linköping University, Sweden); Giuseppe Durisi (Chalmers University of Technology, Sweden)

10:50
Switched Feedback for the Multiple-Access Channel
Oliver Kosut (Arizona State University, USA); Michael Langberg (State University of New York at Buffalo, USA); Michelle Effros (California Institute of Technology, USA)

09:50 – 11:10
Combinatorial Coding Theory I
Room: Michigan League - Henderson

09:50
Improved Constructions of Skew-Tolerant Gray Codes
Gabriel Sac Himelfarb (McMaster University, Canada); Moshe Schwartz (McMaster University, Canada & Ben-Gurion University of the Negev, Israel)

10:10
On Nearly Perfect Covering Codes
Avital Boruchovsky (Technion, Israel); Tuvi Etzion (Technion-Israel Institute of Technology, Israel); Ron M Roth (Technion, Israel)

10:30
Lower Bounds on the Size of Orthogonal Arrays
Smarajit Das (Indian Institute of Technology Guwahati, India)

10:50
Bounds on Box Codes
Michael Langberg (State University of New York at Buffalo, USA); Moshe Schwartz (McMaster University, Canada & Ben-Gurion University of the Negev, Israel); Itzhak Tamo (Tel Aviv University, Israel)

09:50 – 11:10
Lattice Codes
Room: Michigan League – Room D

09:50
Construction of Simultaneously Good Polar Codes and Polar Lattices
Ling Liu and Ruimin Yuan (Xidian University, China); Shanxiang Lyu (Jinan University, China); Cong Ling (Imperial College London, United Kingdom (Great Britain)); Baoming Bai (Xidian University, China)

10:10
Design and Decoding of Full-Diversity Construction-D Lattices on Block-Fading Channels
Maryam Sadeghi (University of British Columbia, Canada); Hassan Khodaiemehr (The University of British Columbia, Canada & K. N. Toosi University of Technology, Iran); Chen Feng (University of British Columbia, Canada)

10:30
(Quasi-)Linear-Time Algorithms for the Closest Vector Problem in (Semi-)Equiangular Lattices
Kenta Takahashi (Hitachi, Ltd., Japan & University of Tokyo, Japan); Wataru Nakamura (Hitachi, Ltd., Japan)

10:50
Probability Distribution of Sneak Path Rate in Resistive Random-Access Memory Arrays
Guanghui Song (Xidian University, China); Junqi Wang (Shanghai Institute of Satellite Engineering, China); Meiru Gao and Ying Li (Xidian University, China); Kui Cai (Singapore University of Technology and Design, Singapore)

09:55 – 17:25
Workshop: Learn to Compress & Compress to Learn
Building: Rackham Graduate School - Amphitheater

09:55
Opening Remarks

10:00
Invited Talk 1: Toward rate-distortion-perception optimality with lattice transform coding
Shirin Saeedi Bidokhti (University of Pennsylvania, USA)

10:40
Invited Talk 2: New directions in causal inference via de Finetti theorems and algorithmic information theory
Ferenc Huszár (University of Cambridge, United Kingdom)

11:20
Poster Session 1 (same for poster session 2 and 3)

Deep Randomized Distributed Function Computation (DeepRDFC): Neural Distributed Channel Simulation
Didrik Bergström and Onur Günlü (Linköping University, Sweden)

Online Conformal Compression for Zero-Delay Communication with Distortion Guarantees
Unnikrishnan Kunnath Ganesan and Giuseppe Durisi (Chalmers University of Technology, Sweden); Matteo Zecchin (King's College London, United Kingdom (Great Britain)); Petar Popovski (Aalborg University, Denmark); Osvaldo Simeone (King's College London, United Kingdom (Great Britain))

Gone with the Bits: Revealing Racial Bias in Low-Rate Neural Compression for Facial Images
Tian Qiu, Arjun Nichani, Rasta Tadayontahmasebi and Haewon Jeong (University of California, Santa Barbara, USA)

On List Decoding with Importance Sampling
Buu Phan and Ashish Khisti (University of Toronto, Canada)

LZMidi: Compression-Based Symbolic Music Generation
Connor Ding, Abhiram Rao Gorle, Sagnik Bhattacharya, Divija Hasteer, Naomi Sagan and Tsachy Weissman (Stanford University, USA)

DeCompress: Denoising via Neural Compression
Ali Zafari, Xi Chen and Shirin Jalali (Rutgers University, USA)

Generalizable Real-Time Accelerated Dynamic MRI
Silpa Babu (Iowa State University, USA); Sajan Lingala (University of Iowa, USA); Namrata Vaswani (Iowa State University, USA)

Discretized Approximate Ancestral Sampling
Alfredo De la Fuente (Google, USA & GOOGLE, USA); Saurabh Singh (Google DeepMind, USA); Jona Ballé (New York University, USA)

11:50
Invited Talk 3: Picking the right few: a statistical theory of data selection under weak supervision
Pulkit Tandon (Granica.ai, USA)

12:30
Spotlight 1: DeCompress: Denoising via Neural Compression
Ali Zafari, Xi Chen and Shirin Jalali (Rutgers University, USA)

12:45
Lunch

13:50
Invited Talk 4: Transformers learn to compress variable-order Markov chain sources in context
Chao Tian (Texas A&M University, USA)

14:30
Spotlight 2: Discretized Approximate Ancestral Sampling
Alfredo De la Fuente (Google, USA & GOOGLE, USA); Saurabh Singh (Google DeepMind, USA); Jona Ballé (New York University, USA)

14:45
Spotlight 3: Online Conformal Compression for Zero-Delay Communication with Distortion Guarantees
Unnikrishnan Kunnath Ganesan and Giuseppe Durisi (Chalmers University of Technology, Sweden); Matteo Zecchin (King's College London, United Kingdom (Great Britain)); Petar Popovski (Aalborg University, Denmark); Osvaldo Simeone (King's College London, United Kingdom (Great Britain))

15:00
Poster Session 2

15:30
Invited Talk 5: State of Learned Compression: Past, Present & Future
Kedar Tatwawadi (Apple, USA)

16:10
Invited Talk 6: Recent Advances in Diffusion-Based Generative Compression
Yibo Yang (Chan Zuckerberg Initiative, USA)

16:50
Awards & Closing Ceremony

16:55
Poster Session 3

11:10 – 11:30
Coffee Break
Room: Michigan League - Ballroom

11:30 – 12:50
Session TH2
Building: Michigan League

11:30 – 12:50
5G and beyond
Room: Michigan League - Lydia Mendelssohn Theatre

11:30
Analysis and Design of Improved 5G LDPC Codes for Faster-Than-Nyquist Signaling
Jiayi Yang and Qianfan Wang (Sun Yat-sen University, China); Shuangyang Li (Technical University of Berlin, Germany); Peng Kang (Fuzhou University, China); Xiao Ma (Sun Yat-sen University, China); Baoming Bai (Xidian University, China); Giuseppe Caire (Technische Universität Berlin, Germany)

11:50
Random Modulation: Achieving Asymptotic Replica Optimality over Arbitrary Norm-Bounded and Spectrally Convergent Channel Matrices
Lei Liu (Zhejiang University, China); Yuhao Chi (Xidian University, China); Shunqi Huang (Japan Advanced Institute of Science and Technology, Japan)

12:10
Efficient Parallel PAS by Sequence Snipping and Arithmetic Coding Based Sphere Shaping
Wei Liu (Qualcomm Technologies, Inc., USA); Thomas Richardson (Qualcomm Flarion Inc., USA); Changlong Xu (Qualcomm, USA); Hao Xu (Qualcomm Technologies Inc., USA)

12:30
Optimized Non-Matched Correlator Design for Enhanced Primary Synchronization Signal Detection in Fifth Generation New Radio
Byung-Jae Kwak and Jinkyeong Kim (ETRI, Korea (South)); Jungho Myung and Young-Jo Ko (Electronics and Telecommunications Research Institute, Korea (South))

11:30 – 12:50
Quantum Information Theory
Room: Michigan League - Hussey

11:30
Optimized Couplings for Watermarking Large Language Models
Carol Long (Harvard University, USA); Dor Tsur and Haim H Permuter (Ben-Gurion University of the Negev, Israel); Flavio P Calmon (Harvard University, USA); Hsiang Hsu (National Taiwan University, Taiwan); Claudio Mayrink Verdun (Harvard University, USA)

11:50
Leveraging Conditional Mutual Information to Improve Large Language Model Fine-Tuning for Classification
Thanushon Sivakaran and En-hui Yang (University of Waterloo, Canada)

12:10
Relatively-Secure LLM-Based Steganography via Constrained Markov Decision Processes
Yu-Shin Huang, Chao Tian and Krishna Narayanan (Texas A&M University, USA); Lizhong Zheng (Massachusetts Institute of Technology, USA)

12:30
Entropy Estimation from Queries and Auxiliary Distribution Samples
Nir Weinberger (Technion, Israel); Ran Tamir (Switzerland)

11:30 – 12:50
Information and Coding in Biology
Room: Michigan League - Vandenburgh

11:30
Optimal Overlap Detection of Shotgun Reads
Nir Luria and Nir Weinberger (Technion, Israel)

11:50
Capacity of a Class of Fully Observed Multistate Poisson-Type Signal Transduction Channels
Daniel T Chen (Brown University, USA); Andrew Eckford (York University, Canada); Peter J Thomas (Case Western Reserve University, USA)

12:10
Spectral Analysis of Nanopore DNA Signatures Under Geometric Duplication
Adrian Vidal (Monash University & University of the Philippines, Diliman, Australia); Emanuele Viterbo (Monash University, Australia)

12:30
Improved Performance with a,ß-Constrained Transmission: a Family of High-Rate Codes $C^{(n)}_{a,ß}$ for Molecular Communication via Diffusion
Tamoghno Nath (IIT Kanpur, India); Krishna Gopal Benerjee (Indian Institute of Technology Kanpur, India); Adrish Banerjee (Indian Institute of Technology, Kanpur, India)

11:30 – 12:50
Quantum Error Correction Code Constructions
Room: Michigan League - Koessler

11:30
Optimizing Hypergraph Product Codes With Random Walks, Simulated Annealing and Reinforcement Learning
Bruno Costa Alves Freire (Inria, France & Pasqal, France); Nicolas Delfosse (Microsoft, USA); Anthony Leverrier (INRIA, France)

11:50
Quantum Multi Deletion Codes Derived From Quantum Reed-Solomon Codes
Manabu Hagiwara (Chiba University, Japan)

12:10
QBEL: Quantum Burst Error Locating Codes
Roni Con (Technion, Israel); Ryan Gabrys (Naval Information Warfare Center Pacific, USA); Eitan Yaakobi (Technion, Israel)

12:30
Efficient Mitigation of Error Floors in Quantum Error Correction Using Non-Binary Low-Density Parity-Check Codes
Kenta Kasai (Institute of Science Tokyo, Japan)

11:30 – 12:50
Estimation and Graphs
Room: Michigan League - Michigan

11:30
On the Equivalence of Gaussian Graphical Models Defined on Complete Bipartite Graphs
Mehdi Molkaraie (University of Toronto, Canada)

11:50
Improved Community Recovery via Exact Matching in Correlated Contextual Stochastic Block Models
JoonHyuk Yang and Hye Won Chung (KAIST, Korea (South))

12:10
Exact Random Graph Matching With Multiple Graphs
Taha Ameen (University of Illinois at Urbana-Champaign, USA); Bruce Hajek (University of Illinois, USA)

12:30
On Interactive Bayesian Persuasion Under Sequential Decision Making
Priyanshu Gautam (Indian Institute of Technology Kharagpur, India); Subodh Kumar (IIT Kharagpur, India); Amitalok J. Budkuley (Indian Institute of Technology Kharagpur, India)

11:30 – 12:50
Combinatorial Coding Theory II
Room: Michigan League - Henderson

11:30
Optimal Moments on Redundancies in Job Cloning
Sahasrajit Sarmasarkar (Stanford University, USA); Harish Pillai (Indian Institute of Technology Bombay, India)

11:50
Single Fragment Forensic Coding from Van der Corput Sets
Junsheng Liu (Washington University in St. Louis, USA); Netanel Raviv (Washington University in Saint Louis, USA)

12:10
Coxeter Codes: Extending the Reed--Muller Family
Nolan Coble and Alexander Barg (University of Maryland, USA)

12:30
Communication With Perfect Feedback for Bit Flips and Erasures
Shreya Nasa and Maoyuan Song (Purdue University, USA); Elena Grigorescu (University of Waterloo, Canada)

11:30 – 12:50
Channel Capacity I
Room: Michigan League – Room D

11:30
New Channel Coding Lower Bounds for Noisy Permutation Channels
Lugaoze Feng (Peking University, China); Xunan Li (CNCERT/CC, China); Guocheng Lv and Ye Jin (Peking University, China)

11:50
Ensemble-Tight Second-Order Asymptotics for Guessing-Based Decoding With Abandonment
Vincent Y. F. Tan (National University of Singapore, Singapore); Hamdi Joudeh (Eindhoven University of Technology, The Netherlands)

12:10
Achievable Rates of Frequency-Based Channels of Unlimited Input Resolution
Ran Tamir (Switzerland); Nir Weinberger (Technion, Israel)

12:30
On Entropy-Constrained Gaussian Channel Capacity via the Moment Problem
Adway Girish (EPFL, Switzerland); Shlomo Shamai (Shitz) (Technion, Israel); Emre Telatar (EPFL, Switzerland)

12:50 – 14:30
Lunch
Room: Michigan League - Ballroom

13:00 – 14:20
Social Event: Meet the Shannon Lecturer
Room: Michigan League - Ballroom

14:30 – 15:50
Session TH3
Building: Michigan League

14:30 – 15:50
Quantum Security and Privacy I
Room: Michigan League - Lydia Mendelssohn Theatre

14:30
Quantum Advantage in Private Multiple Hypothesis Testing
Seung-Hyun Nam (KAIST, Korea (South)); Hyun-Young Park (Korea Advanced Institute of Science and Technology, Korea (South)); Joonwoo Bae and Si-Hyeon Lee (KAIST, Korea (South))

14:50
Measured Hockey-Stick Divergence and Its Applications to Quantum Pufferfish Privacy
Theshani Nuradha, Vishal Singh and Mark M Wilde (Cornell University, USA)

15:10
Capacity Formulas for the Lossy Bosonic Compound Wiretap Channel
Florian Seitz (Technical University of Munich, Germany); Janis Nötzel (Technische Universität München, Germany)

15:30
Secure Composition of Quantum Key Distribution and Symmetric Key Encryption
Kunal Dey and Reihaneh Safavi-Naini (University of Calgary, Canada)

14:30 – 15:50
Unsupervised Learning
Room: Michigan League - Hussey

14:30
Structure Learning in Gaussian Graphical Models from Glauber Dynamics
Vignesh Jayakhar Tirukkonda, Anirudh Harish Rayas and Gautam Dasarathy (Arizona State University, USA)

14:50
Guaranteed Recovery of Unambiguous Clusters
Kayvon Mazooji and Ilan Shomorony (University of Illinois at Urbana-Champaign, USA)

15:10
Perception-Aware Clustering
Emrecan Kutay and Aylin Yener (The Ohio State University, USA)

14:30 – 15:50
Security and Identification
Room: Michigan League - Vandenburgh

14:30
Sliding Window Adversarial Channels
Bikash K Dey (Indian Institute of Technology Bombay, India); Sidharth Jaggi (University of Bristol, United Kingdom (Great Britain)); Michael Langberg (State University of New York at Buffalo, USA); Anand D. Sarwate (Rutgers University, USA); Yihan Zhang (IST Austria, Austria)

14:50
Channel Resolvability Using Multiplicative Weight Update Algorithm
Koki Takahashi and Shun Watanabe (Tokyo University of Agriculture and Technology, Japan)

15:10
Message Identification Over Binary Noisy Permutation Channels
Abhishek Sarkar and Bikash K Dey (Indian Institute of Technology Bombay, India)

15:30
Robust Joint Message and State Transmission Under Arbitrarily Varying Jamming
Yiqi Chen (Technische Universität München, Germany); Holger Boche (Technical University Munich, Germany)

14:30 – 15:50
Multiple Access I
Room: Michigan League - Koessler

14:30
Multiple Preamble Detection With ZC Sequences in the Presence of Mobility and Delay Spread
Sandesh Rao Mattu (Duke University, USA); Imran Ali Khan (Indian Institute of Technology, Delhi, India); Venkatesh Khammammetti and Beyza Dabak (Duke University, USA); Saif Khan Mohammed (Indian Institute of Technology Delhi, India); Krishna Narayanan (Texas A&M University, USA); Robert Calderbank (Duke University, USA)

14:50
Type-Based Unsourced Multiple Access Over Fading Channels With Cell-Free Massive MIMO
Kaan Okumus (Chalmers University of Technology, Sweden); Khac-Hoang Ngo (Linköping University, Sweden); Giuseppe Durisi and Erik G Ström (Chalmers University of Technology, Sweden)

15:10
Downlink Massive Random Access With Lossy Source Coding
Ryan Song and Wei Yu (University of Toronto, Canada)

15:30
Can Non-Signaling Assistance Increase the Degrees of Freedom of a Wireless Network?
Yuhang Yao (University of California, Irvine, USA); Syed Ali Jafar (University of California Irvine, USA)

14:30 – 15:50
Change-Point Detection
Room: Michigan League - Michigan

14:30
High-Dimensional Sequential Change Detection
Robert Malinas (University of Michigan, USA); Dogyoon Song (University of Michigan, Ann Arbor, USA); Benjamin Robinson (Air Force Office of Scientific Research, USA); Alfred Hero III (University of Michigan, USA)

14:50
High-Dimensional Quickest Change Detection in Multiple Data Streams with Adaptive Window-Based Subset Estimation
Arghya Chakraborty (University of Illinois Urbana-Champaign, USA); Georgios Fellouris (University of Illinois at Urbana-Champaign, USA)

15:10
Quickest Mean-Change Detection via Confidence Sequence and Backward Sample Averages
Chih-Hsuan Li and Yu-Chih Huang (National Yang Ming Chiao Tung University, Taiwan); Wen-Hsuan Li (National Taipei University, Taiwan)

15:30
Precise False Alarm Rate of the SUM-CUSUM Scheme for High-Dimensional Streaming Data
Yajun Mei (New York University, USA); Benjamin Yakir (Hebrew University of Jerusalem, Israel)

14:30 – 15:50
Combinatorial Coding Theory III
Room: Michigan League - Henderson

14:30
Higher-Order Staircase Codes: a Unified Generalization of High-Throughput Coding Techniques
Mohannad Shehadeh and Frank R. Kschischang (University of Toronto, Canada)

14:50
Improved Decoding of Tanner Codes
Zhaienhe Zhou (University of Science and Technology of China, China); Zeyu Guo (The Ohio State University, USA)

15:10
Zero-Error Superposition Codes
Chenyu Wang (The Chinese University of Hong Kong, Hong Kong); Ayesha Irfan (University of Bristol, United Kingdom (Great Britain)); Yihan Zhang (IST Austria, Austria); Michael Langberg (State University of New York at Buffalo, USA); Sidharth Jaggi (University of Bristol, United Kingdom (Great Britain))

15:30
Weight Constrained Run Length Limited Gray Codes
Van Khu Vu (Singapore University of Technology and Design, Singapore); Tien Long Nguyen (Pennsylvania State University, USA); Yeow Meng Chee (National University of Singapore, Singapore)

14:30 – 15:50
Lossy and Lossless Source Coding
Room: Michigan League – Room D

14:30
Parse Forests with Huffman-Tree-Based Modes for One-Symbol-Delay Encodable VF Codes
Ryosuke Sugiura (NTT & Communication Science Laboratories, Japan); Masaaki Nishino and Norihito Yasuda (NTT Comunication Science Laboratories, Japan)

14:50
Extensions of Asymmetric Binary Systems and Rayleigh's Theorem
Ken-ichi Iwata and Kengo Hashimoto (University of Fukui, Japan); Hirosuke Yamamoto (The University of Tokyo, Japan)

15:10
Lossless Data Compression at Pragmatic Rates
Andreas Theocharous (University of Cambridge, United Kingdom (Great Britain)); Ioannis Kontoyiannis (University of Cambridge & Statistical Laboratory, United Kingdom (Great Britain))

15:30
A Family of LZ78-Based Universal Sequential Probability Assignments
Naomi Sagan and Tsachy Weissman (Stanford University, USA)

15:50 – 16:10
Coffee Break
Room: Michigan League - Ballroom

16:10 – 17:30
Session TH4
Building: Michigan League

16:10 – 17:30
Secure Communications
Room: Michigan League - Lydia Mendelssohn Theatre

16:10
Joint Covert Communication and Covert Secret Key Generation via Causal CSI
Hassan ZivariFard (Columbia University, USA); Remi A Chou (University of Texas at Arlington, USA); Xiaodong Wang (Columbia University, USA)

16:30
Covert Capacity of AWGN Channels Under Average Error Probability
Cécile Bouette (ETIS - CY Université, ENSEA, CNRS - France); Laura Luzzi (ETIS - CY Université, ENSEA, CNRS, France); Matthieu Bloch (Georgia Institute of Technology, USA)

16:50
Regular LDPC Codes on BMS Wiretap Channels
Madhura Pathegama and Alexander Barg (University of Maryland, USA)

17:10
Secure Rate-Distortion-Perception Trade-off Over Channels: a Randomized Distributed Function Computation (RDFC) Application
Gustaf Åhlgren (Information Coding Division, Linköping University, Sweden); Onur Günlü (Linköping University, Sweden)

16:10 – 17:30
Federated Learning
Room: Michigan League - Hussey

16:10
Federated One-Shot Learning With Data Privacy and Objective-Hiding
Maximilian Egger (Technical University of Munich, Germany); Ruediger L Urbanke (EPFL, Switzerland); Rawad Bitar (Technical University of Munich, Germany)

16:30
Communication-Efficient Hierarchical Secure Aggregation With Cyclic User Association
Xiang Zhang (Technical University of Berlin, Germany); Zhou Li (Guangxi University, China); Kai Wan (Huazhong University of Science and Technology, China); Hua Sun (University of North Texas, USA); Mingyue Ji (University of Florida, USA); Giuseppe Caire (Technische Universität Berlin, Germany)

16:50
Secure Algorithms for Vertically Federated Multi-Task Representation Learning
Ankit Pratap Singh and Namrata Vaswani (Iowa State University, USA)

17:10
Multi-Message Secure Aggregation with Demand Privacy
Chenyi Sun, Ziting Zhang and Kai Wan (Huazhong University of Science and Technology, China); Giuseppe Caire (Technische Universität Berlin, Germany)

16:10 – 17:30
Information Measures and Inequalities
Room: Michigan League - Vandenburgh

16:10
A Differential Equation Approach to the Most-Informative Boolean Function Conjecture
Zijie Chen, Amin Gohari and Chandra Nair (The Chinese University of Hong Kong, Hong Kong)

16:30
Partial Orders and Contraction for BISO Channels
Christoph Hirche and Oxana Shaya (Leibniz Universität Hannover, Germany)

16:50
Approximation Guarantees for Minimum Rényi Entropy Functional Representations
Anuj Kumar Yadav (Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland); Yanina Y. Shkel (Ecole Polytechnique Fédérale, Lausanne, Switzerland)

17:10
Alternating Optimization Approach for Computing α-Mutual Information and α-Capacity
Akira Kamatsuka and Koki Kazama (Shonan Institute of Technology, Japan); Takahiro Yoshida (Nihon University, Japan)

16:10 – 17:30
Multiple Access II
Room: Michigan League - Koessler

16:10
Removal of Small Weight Stopping Sets for Asynchronous Unsourced Multiple Access
Frederik Ritter (Karlsruhe Institute of Technology, Germany); Jonathan Mandelbaum (Karlsruher Institut für Technologie, Germany); Alexander Fengler (DLR, Germany); Holger Jäkel and Laurent Schmalen (Karlsruhe Institute of Technology (KIT), Germany)

16:30
Wrap-Decoding in Asynchronous Unsourced Multiple Access With and Without Delay Information
Jyun-Sian Wu, Pin-Hsun Lin, Marcel A. Mross and Eduard A Jorswieck (Technische Universität Braunschweig, Germany)

16:50
Downlink Spectral Efficiency of LEO Satellite Constellations
Cuneyd Ozturk (Aselsan, Turkey); Dongning Guo, Randall A Berry and Michael Honig (Northwestern University, USA)

17:10
Outage Probability of Correlated RIS-Aided Communication Links
Giorgio Taricco (Politecnico di Torino, Italy)

16:10 – 17:30
Topics in Shannon Theory
Room: Michigan League - Michigan

16:10
Differential Properties of Information in Jump-Diffusion Channels
Luyao Fan, Jiayang Zou, Jiayang Gao and Jia Wang (Shanghai Jiao Tong University, China)

16:30
Convexity of Mutual Information Along the Fokker-Planck Flow
Jiayang Zou, Luyao Fan, Jiayang Gao and Jia Wang (Shanghai Jiao Tong University, China)

16:50
Common Randomness Generation From Sources With Infinite Polish Alphabets
Wafa Labidi, Rami Ezzine and Moritz Wiese (Technical University of Munich, Germany); Christian Deppe (Technical University of Braunschweig, Germany); Holger Boche (Technical University Munich, Germany)

17:10
Optimal Online Bookmaking for Binary Games
Alankrita Bhatt (Caltech, USA); Or Ordentlich and Oron Sabag (Hebrew University of Jerusalem, Israel)

16:10 – 17:30
LDPC and Spatially Coupled Codes
Room: Michigan League - Henderson

16:10
A Strategy to Detect Error Propagation in Sliding Window Decoding of SC-LDPC Codes
Mauro Michele Maria Costantino (Università Politecnica delle Marche, Italy); Massimo Battaglioni (Università Politecnica Delle Marche, Italy); David G Mitchell (New Mexico State University, USA)

16:30
High-Rate Spatially Coupled LDPC Codes Based on Massey's Convolutional Self-Orthogonal Codes
Daniel J. Costello, Jr. (University of Notre Dame, USA); Min Zhu (Xidian University, China & ISN, China); David G Mitchell (New Mexico State University, USA); Michael Lentmaier (Lund University, Sweden)

16:50
Protograph-Based LDPC Codes with Local Irregularity
Vincent Gabriel Wüst and Erdem Eray Cil (Karlsruhe Institute of Technology, Germany); Laurent Schmalen (Karlsruhe Institute of Technology (KIT), Germany)

17:10
Construction of QC-LDPC Codes with Girth g from the Hermite Normal Form of a Matrix
Anthony Gómez-Fonseca (University of Notre Dame, USA)

16:10 – 17:30
Modern Coding Theory I
Room: Michigan League – Room D

16:10
Reconstructing Graphs from Subgraph Compositions
Antoine Dailly (INRAE, France); Tuomo Lehtilä (University of Turku, Finland)

16:30
Bounds and New Constructions for Girth-Constrained Regular Bipartite Graphs
Sheida Rabeti and Mohsen Moradi (Northeastern University, USA); Hessam Mahdavifar (Northeastern, USA)

16:50
Interactive Oracle Proofs of Proximity to Codes on Graphs
Hugo Delavenne (Ecole Polytechnique, France & INRIA, France); Tanguy Medevielle (Université de Rennes, France); Élina Roussel (Ecole Polytechnique, France)

17:10
A Single-Bit Redundancy Framework for Multi-Dimensional Parametric Constraints
Daniella Bar-Lev (University of California, San Diego, USA); Michael Shlizerman (Technion - Israel Institute of Technology, Israel)

17:30 – 21:30
Banquet
Location: Henry Ford Museum
Address: 20900 Oakwood Blvd, Dearborn, MI 48124

Technical Program: Friday, June 27, 2025

07:30 – 16:30
Registration Open
Building: Michigan League - Concourse

07:30 – 12:00
Exhibits Open
Building: Michigan League - Ballroom

08:30 – 09:35
Plenary: Quantum Entropies in One-Shot Information Theory and Beyond
Speaker: Nilanjana Datta, University of Cambridge, England
Building: Michigan League - Lydia Mendelssohn Theatre

09:35 – 09:50
Moving Break

09:50 – 11:10
Session FR1
Building: Michigan League

09:50 – 11:10
Private Information Retrieval II
Room: Michigan League - Lydia Mendelssohn Theatre

09:50
Sun-Jafar-Type Schemes for Weak Private Information Retrieval
Chandan Anand (International Institution of Information Technology Hyderabad, India); Jayesh Seshadri (International Institute of Information Technology, Hyderabad, India); Prasad Krishnan (IIIT Hyderabad, India); Gowtham R. Kurri (International Institute of Information Technology, Hyderabad, India)

10:10
Optimal Functional 2^{s-1}-Batch Codes: Exploring New Sufficient Conditions
Lev Yohananov and Isaac Barouch Essayag (Migal, Israel)

10:30
MDS-TPIR Schemes: Disguise and Squeeze
Rui Sun and Yiwei Zhang (Shandong University, China)

10:50
PIR Over Wireless Channels: Achieving Privacy With Public Responses
Or Elimelech and Asaf Cohen (Ben-Gurion University of the Negev, Israel)

09:50 – 11:10
ML in Communications and Signal Processing
Room: Michigan League - Hussey

09:50
Sequential Change Detection for Learning in Piecewise Stationary Bandit Environments
Yu-Han Huang (University of Illinois, Urbana-Champaign, Taiwan); Venugopal Veeravalli (University of Illinois at Urbana-Champaign, USA)

10:10
Deep Unfolding of Fixed-Point Based Algorithm for Weighted Sum Rate Maximization
Jan C. Riedel (Technische Universitaet Berlin, Germany); Chee Wei Tan (Nanyang Technological University, Singapore); Giuseppe Caire (Technische Universität Berlin, Germany)

10:30
Empirical Bayes Estimation for Lasso-Type Regularizers: Analysis of Automatic Relevance Determination
Tsukasa Yoshida (Toyohashi University of Technology, Japan & NTT, Japan); Kazuho Watanabe (Toyohashi University of Technology, Japan)

10:50
A Local Graph Limits Perspective on Sampling-Based GNNs
Yeganeh Alimohammadi (University of Southern California, USA); Luana Ruiz (Johns Hopkins University, USA); Amin Saberi (Stanford, USA)

09:50 – 11:10
Short Blocklength Codes
Room: Michigan League - Vandenburgh

09:50
Guesswork Complexity of Ordered Statistics Decoding and Its Saturation Threshold
Chentao Yue (The University of Sydney, Australia); Branka Vucetic and Yonghui Li (University of Sydney, Australia)

10:10
A Balanced Tree Transformation to Reduce GRAND Queries
Lukas Rapp (Massachusetts Institute of Technology, USA); Jiewei Feng (Northeastern University, USA); Muriel Médard (MIT, USA); Ken R. Duffy (Northeastern University, USA)

10:30
Subcode Ensemble Decoding of Linear Block Codes
Jonathan Mandelbaum (Karlsruher Institut für Technologie, Germany); Holger Jäkel and Laurent Schmalen (Karlsruhe Institute of Technology (KIT), Germany)

10:50
On Optimal Two-Priority-Level Codes in mmWave Networks
Mine Gokce Dogan (University of California, Los Angeles, USA); Jaimin Shah (University of Minnesota, Twin Cities, USA); Martina Cardone (University of Minnesota, USA); Christina Fragouli (UCLA, USA)

09:50 – 11:10
Social Networks and Related Topics
Room: Michigan League - Koessler

09:50
Sharp Exact Recovery Threshold for Two-Community Euclidean Random Graphs
Julia Gaudio and Charlie K Guan (Northwestern University, USA)

10:10
Observational Learning With a Budget
Shuo Wu (University of Illinios Chicago, USA); Pawan Poojary and Randall A Berry (Northwestern University, USA)

10:30
Semidefinite Programming for the Asymmetric Stochastic Block Model
Julia Gaudio and Phawin Prongpaophan (Northwestern University, USA)

10:50
On Statistical Estimation of Edge-Reinforced Random Walks
Qinghua Ding (University of California at Berkeley, USA); Venkatachalam Anantharam (Berkeley, USA)

09:50 – 11:10
Topics in Communication
Room: Michigan League - Michigan

09:50
Low-Latency Preamble-Free Transmission of Short Messages via Quickest Change Detection
Giles Bischoff and Chih-Chun Wang (Purdue University, USA)

10:10
SE(3)-Based Trajectory Optimization and Target Tracking in UAV-Enabled ISAC Systems
Dongxiao Xu and Xinyang Li (Technical University of Munich, Germany); Vlad Costin Andrei (Technische Unversität München, Germany); Moritz Wiese (Technical University of Munich, Germany); Ullrich J. Mönich (Technische Universität München, Germany); Holger Boche (Technical University Munich, Germany)

10:30
On the Uncertainty of a Simple Estimator for Remote Source Monitoring Over ALOHA Channels
Andrea Munari (German Aerospace Center (DLR), Germany)

10:50
Semantics of Anomalies in Networked Control
Saad Kriouile (Paris Saclay University, France); Mohamad Assaad (CentraleSupelec, France); Touraj Soleymani (University of London, United Kingdom (Great Britain))

09:50 – 11:10
Rank Metric Codes
Room: Michigan League - Henderson

09:50
List-Decodability of Random (Linear) Sum-Rank Metric Codes
Yang Liu and Anna Baumeister (Technical University of Munich, Germany); Antonia Wachter-Zeh (Technical University of Munich (TUM), Germany)

10:10
Recursive Decoding of Binary Rank Reed-Muller Codes and Plotkin Construction for Matrix Codes
Rakhi Pratihar (Inria Saclay Centre & Laboratoire LIX, École Polytechnique, France); Alain Couvreur (INRIA, France)

10:30
Decoding Algorithms for Tensor Codes
Lucien François (University College Dublin, Ireland & INRIA, France); Eimear Byrne (University College Dublin, Ireland); Alain Couvreur (INRIA, France)

10:50
Secret Sharing in the Rank Metric
Johan V. Dinesen (Aalto University, Finland & University College Dublin, Ireland); Eimear Byrne (University College Dublin, Ireland); Ragnar Freij-Hollanti and Camilla Hollanti (Aalto University, Finland)

09:50 – 11:10
Channel Capacity II
Room: Michigan League – Room D

09:50
On the Capacity of Insertion Channels for Small Insertion Probabilities
Busra Tegin and Tolga M Duman (Bilkent University, Turkey)

10:10
Simple Converse Bounds on the Deletion Channel Capacity with Finite Block Lengths
Ruslan Morozov and Tolga M Duman (Bilkent University, Turkey)

10:30

Capacity Bounds for Poset-Causal Channels via Group Symmetry

Eray U Atay and Eitan Levin (California Institute of Technology, USA); Venkat Chandrasekaran (Caltech, USA); Victoria Kostina (California Institute of Technology, USA)

10:50

Channel Capacity Analysis with Nonlinear Effects of RF Power Amplifiers

Tamara Abou El Hessen (University of Illinois at Chicago, USA); Daniela Tuninetti and Aritra Banerjee (University of Illinois Chicago, USA)

11:10 – 11:30
Coffee Break
Room: Michigan League - Ballroom

11:30 – 12:50
Session FR2
Building: Michigan League

11:30 – 12:50
Age of Information I
Room: Michigan League - Lydia Mendelssohn Theatre

11:30

Information Degradation and Misinformation in Gossip Networks

Thomas Jacob Maranzatto, Arunabh Srivastava and Sennur Ulukus (University of Maryland, USA)

11:50

Age of Gossip With Time-Varying Topologies

Arunabh Srivastava, Thomas Jacob Maranzatto and Sennur Ulukus (University of Maryland, USA)

12:10

Timely Gossip on Lines: Hybrid Ageing

Han Xu (Southeast University & School of Information and Engineering, China); Jiayu Pan (Zhejiang University, China); Yinfei Xu (Southeast University, China); Shuo Shao (University of Shanghai for Science and Technology, China); Tiecheng Song (National Mobile Communications Research Laboratory, Southeast University, China)

12:30

Age of Information Optimization With Preemption Strategies for Correlated Systems

Egemen Erbayat (The George Washington University, USA); Ali Maatouk (Yale University, USA); Peng Zou (Nanjing University of Information Science and Technology, China); Suresh Subramaniam (George Washington University, USA)

11:30 – 12:50
Federated and Trustworthy Learning
Room: Michigan League - Hussey

11:30

Exploring Selective Layer Fine-Tuning in Federated Learning

Yuchang Sun (The Hong Kong University of Science and Technology, Hong Kong); Yuexiang Xie (Alibaba, China); Bolin Ding (Alibaba Group, USA); Yaliang Li (Alibaba Group, China); Jun Zhang (The Hong Kong University of Science and Technology, Hong Kong)

11:50

Robust Federated Personalised Mean Estimation for the Gaussian Mixture Model

Malhar A Managoli and Vinod M Prabhakaran (Tata Institute of Fundamental Research, India); Suhas Diggavi (University of California, Los Angeles, USA)

12:10

Towards Unified and Sharpened CMI Bounds for Generalization Errors

Yang Lu, Margreta Kuijper and Jingge Zhu (University of Melbourne, Australia)

12:30
Spatio-Temporal Conformal Prediction for Power Outage Data
Hanyang Jiang and Yao Xie (Georgia Institute of Technology, USA); Feng Qiu (Argonne National Laboratory, USA)

11:30 – 12:50
Convolutional and Streaming Codes
Room: Michigan League - Vandenburgh

11:30
Optimal Linear MAP Decoding of Convolutional Codes
Yonghui Li (University of Sydney, Australia); Chentao Yue (The University of Sydney, Australia); Branka Vucetic (University of Sydney, Australia)

11:50
A Design of Convolutional Gaussain Random Codes
Dengsheng Lin (University of Electronic Science and Technology of China, China)

12:10
Binary Rate-Optimal Streaming Codes with Minimal Code Length
Wenjie Ma (Chinese Academy of Sciences, China); Zhifang Zhang (Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China)

12:30
Streaming Codes for Multi-Hop Relay Networks With Burst Erasures
Vinayak Ramkumar (Tel Aviv University, Israel); Nikhil Krishnan Muralee Krishnan (Indian Institute of Technology Palakkad, India); Myna Vajha (Indian Institute of Technology, Hyderabad, India)

11:30 – 12:50
Group Testing
Room: Michigan League - Koessler

11:30
Non-Adaptive Learning of Random Hypergraphs With Queries
Bethany Austhof and Lev Reyzin (University of Illinois Chicago, USA); Erasmo Tani (Sapienza University of Rome, Italy)

11:50
Noisy Nonadaptive Group Testing With Binary Splitting: New Test Design and Improvement on Price-Scarlett-Tan's Scheme
Xiaxin Li and Arya Mazumdar (University of California, San Diego, USA)

12:10
Combinatorial Group Testing With Adversarial Deletions
Haodong Yang and Venkata Gandikota (Syracuse University, USA); Nikita Polyanskii (IOTA Foundation, Germany)

12:30
The Density Formula Approach for Non-Reversible Isomorphism Theorems, With Applications
Qinghua Ding (University of California at Berkeley, USA); Venkatachalam Anantharam (Berkeley, USA)

11:30 – 12:50
Polar Codes III
Room: Michigan League - Michigan

11:30
On Fast SC-Based Polar Decoders: Metric Polarization and a Pruning Technique
Mohsen Moradi (Northeastern University, USA); Hessam Mahdavifar (Northeastern, USA)

11:50
Constant Weight Polar Codes Through Periodic Markov Processes
Boaz Shuval and Ido Tal (Technion, Israel)

12:10
Towards Weight Distribution-Aware Polar Codes
Mohammad Rowshan (University of New South Wales, Australia); Vlad-Florin Dragoi (University of Arad (UAV), Romania & Normandy University, France); Jinhong Yuan (University of New South Wales, Australia)

12:30
Efficient Polar Systematic Encoding Without the Domination Contiguity Property
Idan Dekel, Yaron Shany, Ariel Doubchak and Amit Berman (Samsung, Israel)

11:30 – 12:50
Error Exponents
Room: Michigan League - Henderson

11:30
Channel Capacity Under Exponentially Decreasing Error Probability
Ming Li, Minghui Yang and Xianhui Lu (Chinese Academy of Sciences, China)

11:50
Exponents for Shared Randomness-Assisted Channel Simulation
Aadil Oufkir and Michael X. Cao (RWTH Aachen University, Germany); Hao-Chung Cheng (National Taiwan University, Taiwan); Mario Berta (RWTH Aachen University, Germany & Imperial College London, United Kingdom (Great Britain))

12:10
Strong Converse Exponent for Remote Lossy Source Coding
Han Wu and Hamdi Joudeh (Eindhoven University of Technology, The Netherlands)

12:30
On the Strong Converse Exponent of the Classical Soft Covering
Xingyi He and S. Sandeep Pradhan (University of Michigan, USA); Andreas Winter (University of Cologne & ICREA, Germany)

11:30 – 12:50
Cryptography I
Room: Michigan League – Room D

11:30
RHQC: Post-Quantum Ratcheted Key Exchange from Coding Assumptions
Julien Juaneda (TéSA, Fédération ENAC ISAE-SUPAERO ONERA, University of Toulouse, France); Marina Dehez-Clementi, Jean-Christophe Deneuville and Jerome Lacan (Fédération ENAC ISAE-SUPAERO ONERA, University of Toulouse)

11:50
On Oblivious Transfer Capacity of Noisy Multiple Access Channel
Hadi Aghaee (Technische Universität Braunschweig, Germany); Christian Deppe (Technical University of Braunschweig, Germany)

12:10
On the Independence Assumption in Quasi-Cyclic Code-Based Cryptography
Emiel Wiedijk (University of Amsterdam, The Netherlands); Maxime Bombar (Institut de Mathématiques de Bordeaux, France); Nicolas Resch (University of Amsterdam, The Netherlands)

12:30
BF-Max: an Efficient Bit Flipping Decoder with Predictable Decoding Failure Rate
Alessio Baldelli, Marco Baldi and Franco Chiaraluce (Università Politecnica delle Marche, Italy); Paolo Santini (Polytechnic University of Marche, Italy)

12:40 – 14:30
Lunch
Room: Michigan League - Ballroom

13:00 – 14:20
Social Event: Mentoring and Outreach
Room: Michigan League - Ballroom

14:30 – 15:50
Session FR3
Building: Michigan League

14:30 – 15:50
Estimation and Learning
Room: Michigan League - Lydia Mendelssohn Theatre

14:30
Fundamental Limits for High-Dimensional Factor Regression Models
Riccardo Rossetti and Galen Reeves (Duke University, USA)

14:50
Linearity-Inducing Priors for Poisson Parameter Estimation Under L^1 Loss
Leighton Barnes (Carnegie Mellon University, USA); Alex Dytso (Qualcomm Inc., USA); H. Vincent Poor (Princeton University, USA)

15:10
Online Learning With Nasty Experts
Nikolaos Papagiannis, Wojciech Szpankowski and Changlong Wu (Purdue University, USA)

14:30 – 15:50
Deep Learning in Coding and Communications
Room: Michigan League - Hussey

14:30
Interplay Between Belief Propagation and Transformer: Differential-Attention Message Passing Transformer
Ken Lau (The Chinese University of Hong Kong, Hong Kong); Shi Xiang and Ziyan Zheng (Tsinghua University, China); Haiwen Cao (Hong Kong Theory Lab, Huawei Technology Company Ltd., Hong Kong); Nian Guo (Huawei Technologies Co., Ltd., China)

14:50
Interpreting KO Codes
Raj Shekhar and Gyuri Turan (University of Illinois Chicago, USA); Milos Zefran (University of Illinois at Chicago, USA); Natasha Devroye (University of Illinois Chicago, USA & University of Illinois - Chicago, USA)

15:10
Deep Autoencoder-Based Constellation Design in Multiple Access Channels
Stepan N Gorelenkov and Mojtaba Vaezi (Villanova University, USA)

15:30
Transformer-Based Decoding in Concatenated Coding Schemes Under Synchronization Errors
Julian Streit (Technical University of Munich, Germany); Franziska Weindel (TU Munich, Germany); Reinhard Heckel (TU München, Germany)

14:30 – 15:50
Blockchains and Leakage
Room: Michigan League - Vandenburgh

14:30
Game of Coding: Enabling Sybil Resistant Decentralized Machine Learning
Hanzaleh Akbari Nodehi (University of Minnesota, USA); Viveck Cadambe (Georgia Institute of Technology, USA); Mohammad Ali Maddah-Ali (University of Minnesota, USA)

14:50
Game of Coding with Unknown Adversary
Hanzaleh Akbari Nodehi (University of Minnesota, USA); Parsa Moradi (University of Minnesota, Twin Cities, USA); Mohammad Ali Maddah-Ali (University of Minnesota, USA)

15:10
Synchronous BFT Under an Information Theoretic Setting With Private Observations
Mo Li (CUHK, SZ, China); Yanyan Dong (unknown); Ximing Fu (Harbin Institute of Technology, Shenzhen, China)

15:30
Several Representations of α-Mutual Information and Interpretations as Privacy Leakage Measures
Akira Kamatsuka (Shonan Institute of Technology, Japan); Takahiro Yoshida (Nihon University, Japan)

14:30 – 15:50
Quantum Security and Privacy II
Room: Michigan League - Koessler

14:30
Entanglement-Enhanced Change Detection
Zihao Gong (University of Maryland, College Park, USA); Saikat Guha (University of Maryland, USA)

14:50
Achievability of Covert Quantum Communication
Evan J. D. Anderson and Michael S Bullock (University of Arizona, USA); Filip Rozpędek (University of Massachusetts, USA); Boulat A. Bash (University of Arizona, USA)

15:10
Secret Sharing over a Two Receiver Classical-Quantum Broadcast Channel
Truman Welling (The Ohio State University, USA); Remi A Chou (University of Texas at Arlington, USA); Aylin Yener (The Ohio State University, USA)

15:30
Quantum Advantage in Zero-Error Function Computation With Side Information
Meng Ruoyu and Aditya Ramamoorthy (Iowa State University, USA)

14:30 – 15:50
Estimation and Algorithms
Room: Michigan League - Michigan

14:30
Multi-Source Approximate Message Passing With Random Semi-Unitary Dictionaries
Burak Çakmak and Giuseppe Caire (Technische Universität Berlin, Germany)

14:50
Information-Theoretic Limits and Approximate Message-Passing for High-Dimensional Time Series
Daria Tieplova (The Abdus Salam International Centre for Theoretical Physics, Italy); Jean Barbier (The Abdus Salam International Center for Theoretical Physics, Italy); Samriddha Lahiry (National University of Singapore, Singapore)

15:10
Universal Discrete Filtering With Lookahead and Delay
Pumiao Yan, Jiwon Jeong, Naomi Sagan and Tsachy Weissman (Stanford University, USA)

15:30
Causal Graph Identification Under Soft Intervention
Chen Peng and Urbashi Mitra (University of Southern California, USA)

14:30 – 15:50
Detection and Bottleneck
Room: Michigan League - Henderson

14:30
Detecting Correlation Between Multiple Unlabeled Gaussian Networks
Taha Ameen (University of Illinois at Urbana-Champaign, USA); Bruce Hajek (University of Illinois, USA)

14:50
Enhancing Binary Search via Overlapping Partitions
Kaan Buyukkalayci (University of California, Los Angeles (UCLA), USA); Merve Karakas, Xinlin Li and Christina Fragouli (UCLA, USA)

15:10
Probing-Based Sequential Decision Making Under Cognitive Limitations
Subodh Kumar (IIT Kharagpur, India); Priyanshu Gautam and Amitalok J. Budkuley (Indian Institute of Technology Kharagpur, India)

15:30
Statistically Valid Information Bottleneck via Multiple Hypothesis Testing
Amirmohammad Farzaneh and Osvaldo Simeone (King's College London, United Kingdom (Great Britain))

14:30 – 15:50
Cryptography II
Room: Michigan League – Room D

14:30
An Analysis of a Generalization of Loidreau's Encryption Scheme
Kayodé Epiphane Nouetowa (Université de Rennes, France); Pierre Loidreau (Université de Rennes & DGA MI, France)

14:50
Asymptotic Improvements to Provable Algorithms for the Code Equivalence Problem
Huck Bennett (University of Colorado Boulder, USA); Drisana Bhatia (University of California Berkeley, USA); Jean-Francois Biasse (University of South Florida, USA); Medha Durisheti (Virginia Polytechnic Institute and State University, USA); Lucas LaBuff (University of Maryland, USA); Vincenzo Pallozzi Lavorante and Phillip Waitkevich (University of South Florida, USA)

15:10
Optimal Computational Secret Sharing
Igor L. Aureliano (University of Campinas, Brazil); Alejandro Cohen (Technion, Israel); Rafael D'Oliveira (Clemson University, USA)

15:30
Constrained Optimization of Access Functions in Uniform Secret Sharing
Amirhosein Morteza and Remi A Chou (University of Texas at Arlington, USA)

15:50 – 16:10
Coffee Break
Room: Michigan League - Ballroom

16:10 – 17:30
Session FR4
Building: Michigan League

16:10 – 17:30
Age of Information II
Room: Michigan League - Lydia Mendelssohn Theatre

16:10
Optimizing the Trade-off Between Throughput and PAoI Outage Exponents
Tai-Chun Yeh and Yu-Pin Hsu (National Taipei University, Taiwan)

16:30
Optimum Monitoring and Job Assignment With Multiple Markov Machines
Sahan Liyanaarachchi and Sennur Ulukus (University of Maryland, USA)

16:50
Time-Dependent Statistical Characteristics of Age of Information Under Periodic Updating
Tianci Zhang, Zhengchuan Chen and Zhong Tian (Chongqing University, China); Min Wang (Chongqing University of Posts and Telecommunications, China); Jemin Lee (Yonsei University, Korea (South)); Tony Q. S. Quek (Singapore University of Technology and Design, Singapore)

17:10
AoI in M/G/1/1 Queues With Probabilistic Preemption
Mohammad Moltafet (University of California Santa Cruz (UCSC), USA); Hamid Sadjadpour (University of California, Santa Cruz, USA); Zouheir Rezki (University of California Santa Cruz, USA); Marian Codreanu (Linkoping University, Sweden); Roy Yates (Rutgers University, USA)

16:10 – 17:30
Quantum Error Correction for Computation
Room: Michigan League - Hussey

16:10
Enhanced Min-Sum Decoding of Quantum Codes with Iteration Dynamics Memory
Dimitris Chytas, Nithin Raveendran and Bane Vasic (University of Arizona, USA)

16:30
The Performance of Long Quantum LDPC Codes Based on the Hypergraph Product
Mert Gökduman, Hanwen Yao and Henry D Pfister (Duke University, USA)

16:50
Belief Propagation Decoding on a Sparsified Graph Ensemble of the Surface Code
Boqing Zhang, Hanwen Yao and Henry D Pfister (Duke University, USA)

17:10
On the Efficacy of the Peeling Decoder for the Quantum Expander Code
Abhinav Vaishya (Indian Institute of Science, India); Jefrin Sharmitha Prabhu (Indian Institute of Science, Bangalore, India); Shobhit Bhatnagar (Indian Institute of Science, India); Aryaman Manish Kolhe (International Institute of Information Technology, Hyderabad, India); V. Lalitha (IIIT Hyderabad, India); P Vijay Kumar (Indian Institute of Science & University of Southern California, India)

16:10 – 17:30
Modern Coding Theory II
Room: Michigan League - Vandenburgh

16:10
Algebraic Soft Decoding of Hermitian Codes with Re-Encoding Transform
Jiwei Liang and Li Chen (Sun Yat-sen University, China)

16:30
In-Memory BER Estimation Using Syndromes of LDPC Codes
Yotam Gershon (Technion - Israel Institute of Technology, Israel); Yuval Cassuto (Technion, Israel)

16:50
Bounds and Codes for General Phased Burst Errors
Andrea Di Giusto (Eindhoven University of Technology, The Netherlands); Sebastian Bitzer (Technical University of Munich, Germany); Alberto Ravagnani (Eindhoven University of Technology, The Netherlands); Eitan Yaakobi (Technion, Israel)

17:10
List Viterbi Algorithm Aided Low-Latency OSD
Xihao Li and Li Chen (Sun Yat-sen University, China)

16:10 – 17:30
Estimation and Prediction II
Room: Michigan League - Koessler

16:10
Information-Geometric Analysis of the Optimal Error Exponent in Fixed-Length Hypothesis Testing
Qingyue Zhang, Xinyi Tong and Tianren Peng (Tsinghua University, China); Shao-Lun Huang (Tsinghua-Berkeley Shenzhen Institute, China)

16:30
On Non-Linearities of Simple Learned AWGN Feedback Codes
Yingyao Zhou (University of Illinois Chicago, USA); Natasha Devroye (University of Illinois Chicago, USA & University of Illinois - Chicago, USA); Gyuri Turan (University of Illinois Chicago, USA); Milos Zefran (University of Illinois at Chicago, USA)

16:50
Model Non-Collapse: Minimax Bounds for Recursive Discrete Distribution Estimation
Millen Kanabar and Michael Gastpar (EPFL, Switzerland)

17:10
Robust Alignment via Partial Gromov-Wasserstein Distances
Xiaoyun Gong, Sloan Nietert and Ziv Goldfeld (Cornell University, USA)

16:10 – 17:30
Capacity and Channel Coding
Room: Michigan League - Michigan

16:10
Optimizing Sequencing Coverage Depth in DNA Storage: Insights from DNA Storage Data
Xin Chen and Ruiying Cao (Tianjin University, China)

16:30
Capacities of DNA Constrained Channel: Efficient Synthesis and Biological Constraints
Chen Wang and Yiwei Zhang (Shandong University, China); Kui Cai and Thanh Tuan Nguyen (Singapore University of Technology and Design, Singapore)

16:50
Bounding the Capacity of the Multinomial Channel Using KL Divergence Covering and Packing
Jennifer Tang (MIT, USA)

17:10
DeepDIVE: Optimizing Input-Constrained Distributions for Composite DNA Storage via Multinomial Channel
Adir Kobovich (Technion - Israel Institute of Technology, Israel); Eitan Yaakobi and Nir Weinberger (Technion, Israel)

16:10 – 17:30
Iterative Decoding and Constellations
Room: Michigan League - Henderson

16:10

Belief Propagation Decoding for Short Codes on Structured Sparse Parity-Check Matrices

Yifei Shen (EPFL, Switzerland); Zongyao Li (Southeast University, China); Emmanuel Boutillon (Université de Bretagne Sud, France); Wenqing Song and Yuqing Ren (EPFL, Switzerland); Chuan Zhang (National Mobile Communications Research Laboratory, Southeast University, China); Xiaohu You (National Mobile communication Research Lab., Southeast University, China); Andreas Burg (EPFL, Switzerland)

16:30

Physics-Aware Decoding for Communication Channels Governed by Partial Differential Equations

Tadashi Wadayama (Nagoya Institute of Technology, Japan); Koji Igarashi and Takumi Takahashi (Osaka University, Japan)

16:50

Threshold Selection for Iterative Decoding of (V, W)-Regular Binary Codes

Alessandro Annechini (Politecnico di Milano, Italy); Alessandro Barenghi (Politecnico Di Milano, Italy); Gerardo Pelosi (Politecnico di Milano, Italy)

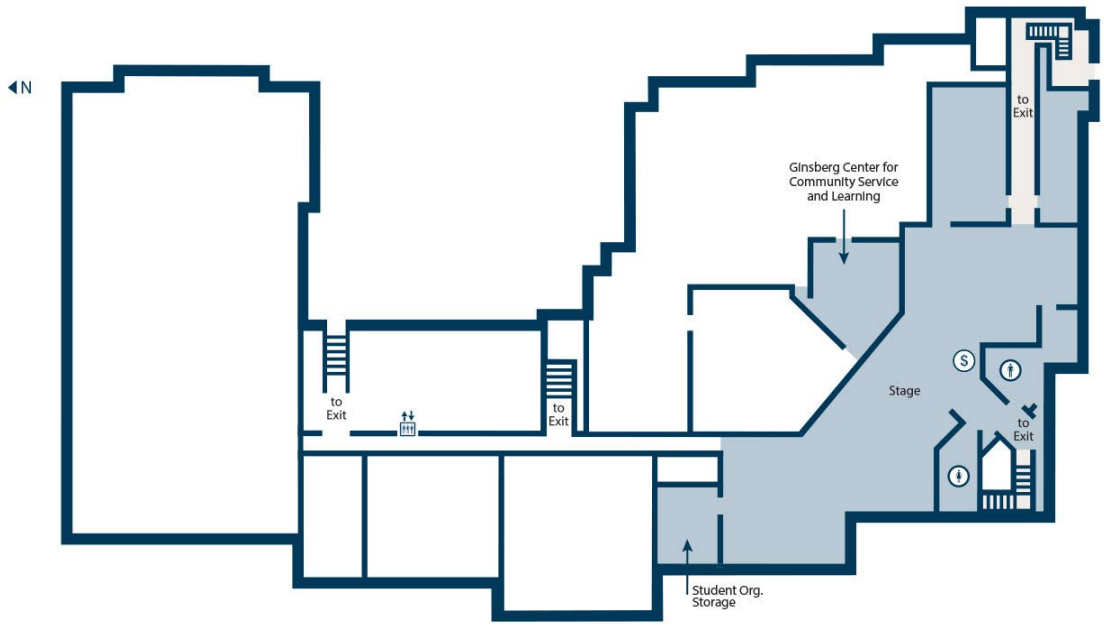
17:10

The Mystery of an Infinite-Size Constellation: Applications in Few-Shot Communication

Mohammad Ali Maddah-Ali and Soheil Mohajer (University of Minnesota, USA)

Floor Plans

Ground Floor



Michigan League Ground Floor

First Floor

Michigan League First Floor

Second Floor

Michigan League Second Floor

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Addresses

Conference Venues – University of Michigan

Michigan League

911 N University Ave, Ann Arbor, MI 48109

Rackham Graduate School

915 E Washington St, Ann Arbor, MI 48109

Welcome Reception Venue

Michigan League

911 N University Ave, Ann Arbor, MI 48109

Banquet Venue

Henry Ford Museum of American Innovation

20900 Oakwood Blvd, Dearborn, MI 48124

ISIT transportation for the banquet is only being provided for Thursday, June 26, 2025 from the Michigan League to the Henry Ford Museum, and returning to hotels and the Michigan League from 17:15 – 23:00.

Parking

Parking is available in Ann Arbor City Parking structures in city-owned parking structures.

Suggested structures for conference parking are:

- Maynard Street Public Parking: Located on Maynard Street between E. William and E. Liberty with an additional entrance off Thompson between E. Liberty and E. William.
- Liberty Square Public Parking: Located on Washington Street between Division and State Streets
- S. Forest Public Parking: Located on S. Forest Street between S. University and Willard Streets

Public parking meters are enforced Monday through Saturday, 8 a.m.-6 p.m. unless otherwise stated on the meter or central pay station. Cost is $2.40/hour; free on evenings, Sundays.

See this website for more information on Public Parking Structures and an interactive map: https://www.a2dda.org/getting-around/drive/

Parking is not available in University of Michigan staff parking structures. Parking in downtown Ann Arbor and on the University of Michigan campus is very limited. Public safety officials and Parking officials are diligent in issuing tickets to improperly parked vehicles. Any tickets you receive are your responsibility.

Wifi Information

Networks:

- Mguest – no password needed
- Eduroam – passworded needed, access via https://eduroam.org/