

The IEEE Information Theory Workshop

PROGRAM



ITW 2019

Visby, Gotland, Sweden

Aug 25-28



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LETTER FROM THE CHAIRS

Welcome to Visby and IEEE ITW 2019!

We are happy to present a strong technical program, with 6 plenary sessions and 27 technical sessions, for a total of 162 presentations. As social program, we have the welcome reception, a city tour and the workshop banquet.

Visby is a UNESCO World Heritage site, offering several scenic walks with a medieval and Baltic Sea backdrop. The period August 25 through 28 is late summer season in Visby, a time when we can experience the city slowly settling down after a busy Scandinavian vacation period.

The workshop co-chairs wish to extend their sincere gratitude to our meeting sponsors, IEEE, Ericsson, Huawei, VR and the ACCESS Center at KTH. We also thank the other members of the organizing committee, the TPC co-chairs and all the members TPC, Giulia Cervia for helping produce the printed booklet, and the other KTH students and postdocs that assisted in the implementation.

With wishes for a great time in Visby and fruitful scientific interaction among the workshop participants,

Tobias Oechtering, Mikael Skoglund, Lars Rasmussen

The general chairs

PRACTICAL INFORMATION

PROCEEDINGS

To download the proceedings, please visit the following link
<https://bit.ly/2GPUbl2>, or scan the QR Code.

Password: $\log(1 + \text{SNR})$



CONFERENCE APP

The **Conference4me** smartphone app provides you with the most comfortable tool for planning your participation to IEEE ITW 2019. Browse the complete program directly from your phone or tablet and create your very own agenda on the fly. The app is available for Android and iOS devices. To download the mobile app, please visit <http://conference4me.eu/download>, or scan the QR Code, or type “conference4me” in Google Play or iTunes App Store. Once you successfully installed the Conference4me App, you need to download the information for our conference. The conference name is “**2019 IEEE Information Theory Workshop (ITW 2019)**”. More information can be found here: <http://conference4me.eu/download>.



RECEPTION DESK

The registration desk will open on **Sunday, Aug 25 from 17:30 to 22:00** at the entrance of the Gotland museum. Monday through Wednesday, the registration desk will be open at entrance of Donner event hall at the following times:

- **Mon, Aug 26, 7:30-18:00**
- **Tue, Aug 27, 7:30-9:00, 12:15-13:15 (lunch), 16:00-16:20 (coffee break)**
- **Wed, Aug 28, 7:30-9:00, 11:55 - 12:55 (lunch), 15:40-16:00 (coffee break)**

WI-FI

Wi-Fi will be provided by the open network at Donners Event.

VENUE

DONNERS EVENT - VISBY

Event Hallen

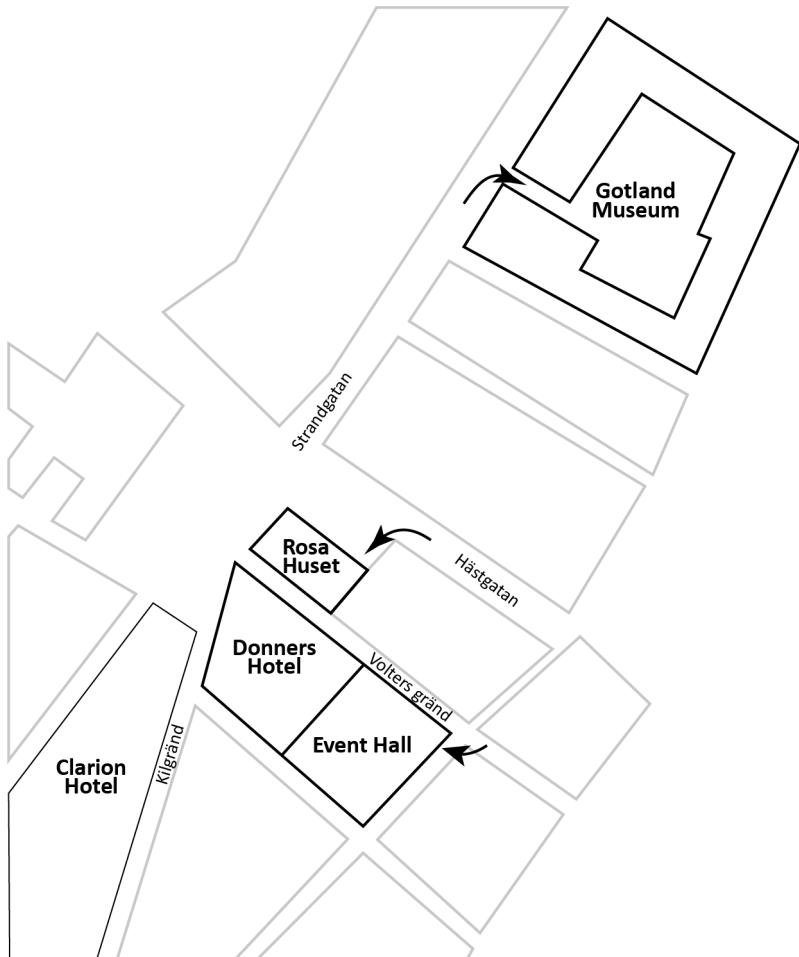
Mellangatan 9, 621 57 Visby

Plenaries, technical sessions, coffee breaks, lunches, and dinner

Rosa Huset

Donners plats 3, 621 57 Visby

Technical sessions



PROGRAM OVERVIEW

Sunday August 25

19:00 - 22:00 Welcome reception

Monday August 26

	Event Hall	Rosa Huset Lower FLR	Rosa Huset Upper FLR
08:00 - 09:00	Plenary <i>Anant Sahai</i>		
09:00 - 10:15	Poster Session I & Coffee		
10:15 - 12:15	MoAM1 <i>Entropy</i>	MoAM2 <i>Spatially Coupled Codes and Polar Codes</i>	MoAM3 <i>Privacy</i>
12:15 -13:15	Lunch		
13:15 -14:15	Plenary <i>Ilya Dumer</i>		
14:20 - 16:00	MoPM1 <i>Security and Privacy</i>	MoPM2 <i>Algebraic Coding and Lattices</i>	MoPM3 <i>Multi Terminal Information Theory</i>
16:00 - 16:20	Coffee Break		
16:20 - 18:00		MoInv1 <i>Entropy, Information and Control 1</i>	MoInv2 <i>Polar Codes</i>
18:15	City Walking Tour		

Tuesday August 27

	Event Hall	Rosa Huset Lower FLR	Rosa Huset Upper FLR
08:00 - 09:00	Plenary <i>Aylin Yener</i>		
09:00 - 10:15	Poster Session II & Coffee		
10:15 - 12:15	TuAM1 <i>Coordination, Information and Statistics</i>	TuAM2 <i>Caching and Index Coding</i>	TuAM3 <i>Coding for Memories</i>
12:15 -13:15	Lunch		
13:15 -14:15	Plenary <i>Angelia Nedich</i>		
14:20 - 16:00	TuPM1 <i>Distributed Computing</i>	TuPM2 <i>Source Coding</i>	TuPM3 <i>Detection, Estimation and Classification</i>
16:00 - 16:20	Coffee Break		
16:20 - 18:00		TuInv1 <i>Privacy and Security 1</i>	TuInv2 <i>Entropy, Information and Control 2</i>
19:00 - 22:00	Workshop Banquet		

Wednesday August 28

	Event Hall	Rosa Huset Lower FLR	Rosa Huset Upper FLR
08:00 - 09:00	Plenary <i>Olgica Milenkovic</i>		
09:00 - 10:15	Poster Session III & Coffee		
10:15 - 11:55	WeAM1 <i>Graph Based Codes and Message Passing</i>	WeAM2 <i>Multi User Communications</i>	WeAM3 <i>Error Exponents</i>
11:55 -12:55	Lunch		
12:55 -13:55	Plenary <i>Syed Jafar</i>		
14:00 - 15:40	WePM1 <i>Coding Theory and Practice</i>	WePM2 <i>Capacity and Mutual Information</i>	WePM3 <i>Security</i>
15:40 - 16:00	Coffee Break		
16:00 - 17:40		WeInv1 <i>Graph Based Codes and Spatial Coupling</i>	WeInv2 <i>Privacy and Security 2</i>

PLENARY TALKS



Harmless interpolation in learning

Anant Sahai - University of California Berkeley, USA

Abstract: A continuing mystery in understanding the empirical success of deep neural networks has been in their ability to achieve zero training error and yet generalize well, even when the training data is noisy and there are many more parameters than data points. Following the information-theoretic tradition of seeking understanding, this talk will share our three-part approach to shedding light on this phenomenon. First, following the tradition of such distilled toy models like the BSC and AWGN channels, the Gaussian source, or scalar linear control systems, we zoom in on the classical linear regression problem in the underdetermined setting with more parameters than training data. Here, the solutions that minimize training error interpolate the data, including noise. Second, following the tradition of converse bounds, we give a genie-aided bound on how well such interpolative solutions can generalize to fresh test data, and show that this bound generically decays to zero with the number of extra features, thus characterizing an explicit benefit of overparameterization. Third, we talk about what it takes to achieve such harmless interpolation in appropriately overparameterized limits. For appropriately sparse linear models, we provide a hybrid interpolating scheme (combining classical sparse recovery schemes with harmless noise-fitting) to achieve generalization error close to the bound on interpolative solutions. Along the way, we call out certain key concepts that we call “signal bleed” and “crab-pot regularization” that help us understand what is required to achieve harmless interpolation in general.



Polarization Process from a Geometric Perspective

Ilya Dumer - University of California Riverside, USA

Abstract: We first describe successive cancellation (SC) decoding on a binary-input symmetric memoryless channel using the Plotkin ($u, u+v$) construction. Here we also briefly address the complexity and performance characteristics of SC decoding and turn to its polarization properties. Any synthetic channel is then represented as some ensemble $\{\beta_i, \varepsilon_i\}$ of the binary symmetric channels (BSC) that occur in the decoding process with different probabilities β_i and have different crossover probabilities $(1 - \varepsilon_i)/2$. Each BSC(ε_i) can then be mapped onto a planar unit vector $(\sin \theta_i, \cos \theta_i)$, where $\theta_i = \arcsin \varepsilon_i$. In the upgrading process, two ordered vectors with angles θ_i and θ_j produce a unit vector that has probability $\beta_i \beta_j$ and a smaller angle $\theta_{i,j}^+ = \arcsin(\sin \theta_i \sin \theta_j)$. Similarly, a pairwise degrading of two BSC channels yields a unit vector that has probability $\beta_i \beta_j$ and a larger angle $\theta_{i,j}^-$ such that $\cos \theta_{i,j}^- = \cos \theta_i \cos \theta_j$. Polarization process then becomes a pairwise angle-modifying transformation of unit vectors with different angles θ_i in the ensemble $\{\beta_i, \theta_i\}$. We study the properties of the angles θ_i and estimate how they change in the upgrading-degrading process. In particular, we show that any two input angles θ_i and θ_j produce the diverging outputs $\theta_{i,j}^+$ and $\theta_{i,j}^-$ that have a larger mutual separation as long as $0 < \theta_i, \theta_j < \pi/2$. We also study some other quantities associated with pairwise transformations. As a result, different angles θ_i polarize and tend to 0 or $\pi/2$ with probability 1. This also proves the polarizing behavior of synthetic channels.



Information Security in the All-Connected World

Aylin Yener - The Pennsylvania State University, USA

Abstract: An all-wireless vision connecting billions of devices is finally in sight with the Internet-of-Everything paradigm. This vision entails large networks with dynamic connectivity, ad hoc formation and heterogeneous nodes. Central to be able to integrate all our lives to this massive virtual domain is security and privacy of the information that flows through it. Current wireless systems have security of information as an add-on to current design, and rely on application layer protocols, which have worked well for the scale and the resources of the systems to date. Going forward however, with massive scale formation of networks of asymmetric resources, these protocols involving key exchanges and shared randomness for security may prove to be less than practical. Securing information at the foundation of system design can alleviate these issues by replacing or strengthening the present cryptographic solutions. This foundational design approach brings us to information theoretic security for the all-connected world. In this talk, we will provide an overview of this approach that relies on local randomness and produces information theoretic security guarantees, e.g, for confidentiality and authentication, utilizing the properties of the transmission medium. We will review the insights that have emerged when information security is included as a design primitive and provide the state of the art directions towards realizing the potential of this approach. We will also introduce models where this approach can be integrated with encryption for nodes with local memory storage.



Distributed Algorithms for Optimization in Networks

Angelia Nedich - Arizona State University, USA

Abstract: We will overview the distributed optimization algorithms starting with the basic underlying idea illustrated on a prototype problem in machine learning. In particular, we will focus on convex minimization problem where the objective function is given as the sum of convex functions, each of which is known by an agent in a network. The agents communicate over the network with a task to jointly determine a minimum of the sum of their objective functions. The communication network can vary over time, which is modeled through a sequence of graphs over a static set of nodes (representing the agents in a system). In this setting, the distributed first-order methods will be discussed that make use of an agreement protocol, which is a mechanism replacing the role of a coordinator. We will discuss some refinements of the basic method and conclude with more recent developments of fast methods that can match the performance of centralized methods (up to a logarithmic factor).



Hypergraph Partitioning with Applications

Olga Milenkovic - University of Illinois, Urbana-Champaign, USA

Abstract: Hypergraph partitioning is an important problem in machine learning, computer vision, VLSI design and network analytics. A widely used method for hypergraph partitioning relies on minimizing a normalized sum of the costs of placing hyperedges across clusters. Algorithmic solutions for this approach assume that different partitions of a hyperedge incur the same cost. However, this assumption fails to address settings in which different subsets of vertices in the same hyperedge provide different contributions to the underlying higher order relations. To accommodate nonuniform partitioning costs, we introduce the notions of inhomogeneous spectral hypergraph partitioning and submodular hypergraphs. Inhomogeneous spectral partitioning produces a quadratic approximation to the optimal solution if the costs satisfy submodularity constraints. We illustrate the advantages of inhomogeneous over classical hypergraph partitioning on applications as diverse as structure learning of rankings, subspace segmentation and motif clustering.



Fundamental Limits of Privacy, Security, Structure and Alignment through the Lens of Private Information Retrieval

Syed A. Jafar - University of California Irvine, USA

Abstract: The modern era of big data increasingly requires outsourcing of large data sets to remote servers (the cloud). Remote storage gives rise to new challenges such as user privacy and information security in addition to the concerns about data integrity, communication efficiency and computation complexity. The goal of Private Information Retrieval (PIR) is to allow users to efficiently access desired records from remotely stored datasets without revealing to the servers which records are desired. Recent information theoretic advances have led to capacity characterizations of PIR as well as several of its variants, and generated excitement for the future prospects of this rich research avenue. This is especially significant because PIR is a point of convergence of complementary perspectives. Indeed, PIR is the lens through which information theoretic analysis may be applied to a number of interconnected issues – ranging from practical concerns such as privacy, security, integrity and computation complexity of distributed storage to broader theoretical ideas such as the structure of information and interference alignment. It is well known that PIR shares intimate connections to prominent problems in theoretical computer science and cryptography, communication and information theory, and coding and signal processing. As such, discoveries in PIR have the potential for a ripple effect in their impact on a number of related problems. The talk will highlight such connections, with special focus on privacy, security, locality, cross-subspace alignment and secure distributed matrix multiplication.

TECHNICAL PROGRAM

Poster Session I

Date : Monday, August 26

Location : Event Hall

On the Computational Complexity of Finding Bipartite Graphs with a Small Number of Short Cycles and Large Girth*

Ali Dehghan - Carleton University, Canada

Amir Banihashemi - Carleton University, Canada

***Moved from Poster Session III on Wednesday to Poster Session I on Monday**

Relative Age of Information: A New Metric for Status Update Systems

Peng Zou - George Washington University, USA

Omur Ozel - George Washington University, USA

Suresh Subramaniam - George Washington University, USA

On The Sample Complexity of HGR Maximal Correlation Functions

Shao-Lun Huang - Tsinghua-Berkeley Shenzhen Institute, P.R. China

Xiangxiang Xu - Tsinghua University, P.R. China

The Additive Noise Channel with a Helper

Amos Lapidoth - ETHZ, Switzerland

Shraga Bross - Bar-Ilan University, Israel

Source coding with side information for binary memoryless sources

Boris D. Kudryashov - St. Petersburg University of Information Technologies,
Mechanics and Optics, Russia

Irina Bocharova - St. Petersburg University of Information Technologies,
Mechanics and Optics, Russia

Empirical coordination subject to a fidelity criterion

Michail Mylonakis - KTH Royal Institute of Technology, Sweden

Photios A. Stavrou - KTH Royal Institute of Technology, Sweden

Mikael Skoglund - KTH Royal Institute of Technology, Sweden

Estimation of Bounded Normal Mean: An Alternative Proof for the Discreteness of the Least Favorable Prior

Semih Yagli - Princeton University, USA

Alex Dytso - Princeton University, USA

H. Vincent Poor - Princeton University, USA

A Mismatched Decoding Perspective of Channel Output Quantization

Mehdi Dabirnia - Universitat Pompeu Fabra, Spain

Alfonso Martinez - Universitat Pompeu Fabra, Spain

Albert Guillén i Fàbregas - ICREA and Universitat Pompeu Fabra &
University of Cambridge, Spain

Secrecy and Error Exponents of k -Transmitter Multiple Access Wire-tap Channel

Masahito Hayashi - Nagoya University, Japan

Yanling Chen - University of Duisburg-Essen, Germany

Benefits of Coding on Age of Information in Broadcast Networks

Xingran Chen - University of Pennsylvania, USA

Shirin Saeedi Bidokhti - University of Pennsylvania, USA

Differential Power Analysis Attacks from an Information-Theoretic Perspective

Andrea Grigorescu - Technische Universität München, Germany

Holger Boche - Technische Universität München, Germany

On Designing Probabilistic Supports to Map the Entropy Region

John M. Walsh - Drexel University, USA

Alejandro Erick Trofimoff - Drexel University Philadelphia, USA

MoAM1 Entropy

Date : Monday, August 26

Location : Event Hall

Session Chair : Maël Le Treust - ETIS, Université Paris Seine, Université Cergy-Pontoise
ENSEA, CNRS, France

10:15

Guesswork for Inference in Machine Translation with Seq2seq Model

Litian Liu - Massachusetts Institute of Technology, USA

Derya Malak - Massachusetts Institute of Technology, USA

Muriel Médard - Massachusetts Institute of Technology, USA

10:35

Coding for Non-IID Sources and Channels: Entropic Approximations and a Question of Ahlswede

Holger Boche - Technische Universität München, Germany

Rafael F. Schaefer - Technische Universität München, Germany

H. Vincent Poor - Princeton University, USA

10:55

A Tight Upper Bound on Mutual Information

Michal Hledík - IST Austria, Austria

Thomas Sokolowski - IST Austria, Austria

Gašper Tkačič - IST Austria, Austria

11:15

Mutual Information for Low-Rank Even-Order Symmetric Tensor Factorization

Clement Luneau - EPFL, Switzerland

Nicolas Macris - EPFL, Switzerland

Jean Barbier - The Abdus Salam International Center for Theoretical Physics, Italy

11:35

Intrinsic Randomness Problem with Respect to a Subclass of f -divergence

Ryo Nomura - Waseda University, Japan

11:55

Stochastic stability of nonlinear dynamical systems under information constraints

Christoph Kawan - Ludwig-Maximilians-Universität München, Germany

Serdar Yüksel - Queen's University, Canada

MoAM2 Spatially Coupled Codes and Polar Codes

Date : Monday, August 26

Location : Rosa Huset, Lower Floor

Session Chair : Alexandre Graell i Amat - Chalmers University of Technology, Sweden

10:15

A Refined Scaling Law for Spatially Coupled LDPC Codes Over the Binary Erasure Channel

Roman Sokolovskii - Chalmers University of Technology, Sweden

Fredrik Brännström - Chalmers University of Technology, Sweden

Alexandre Graell i Amat - Chalmers University of Technology, Sweden

10:35

Optimization of Nested Array-based LDPC Codes Via Spatial Coupling

Salman Habib - New Jersey Institute of Technology, USA

David G. M. Mitchell - New Mexico State University, USA

Joerg Kliewer - New Jersey Institute of Technology, USA

10:55

Density Evolution Analysis of Partially Information Coupled Turbo Codes on the Erasure Channel

Min Qiu - University of New South Wales, Australia

Xiaowei Wu - University of New South Wales, Australia

Yixuan Xie - University of New South Wales, Australia

Jinhong Yuan - University of New South Wales, Australia

11:15

Improved List Decoding of Polar Codes by Shifted-pruning

Mohammad Rowshan - Monash University, Australia

Emanuele Viterbo - Monash University, Australia

11:35

Purely Quantum Polar Codes

Frédéric Dupuis - Université de Lorraine, CNRS, Inria, LORIA, France

Ashutosh Goswami - University Grenoble Alpes & LIG, France

Mehdi Mhalla - University of Grenoble Alpes, CNRS, Grenoble INP, LIG, France

Valentin Savin - CEA LETI, France

11:55

Construction of binary polarization kernels for low complexity window processing

Grigorii Trofimiuk - ITMO University, Russia

Peter Trifonov - ITMO University, Russia, Russia

Date : Monday, August 26

Location : Rosa Huset, Upper Floor

Session Chair : Anoosheh Heidarzadeh - Texas A&M University, USA

10:15

On the Capacity of Private Nonlinear Computation for Replicated Databases

Sarah Obead - New Jersey Institute of Technology, USA

Hsuan-Yin Lin - Simula UiB, Norway

Eirik Rosnes - Simula UiB, Norway

Joerg Klawer - New Jersey Institute of Technology, USA

10:35

On an Equivalence Between Single-Server PIR with Side Information and Locally Recoverable Codes

Swanand Kadhe - University of California, Berkeley, USA

Anoosheh Heidarzadeh - Texas A&M University, USA

Alex Sprintson - Texas A&M University, USA

O. Ozan Koyluoglu - University of California, Berkeley, USA

10:55

Capacity of Quantum Private Information Retrieval with Collusion of All But One of Servers

Seunghoan Song - Nagoya University, Japan

Masahito Hayashi - Nagoya University, Japan

11:15

Context Aware Laplacian Mechanism for Local Information Privacy

Mohamed Seif Eldin Mohamed - University of Arizona, USA

Ravi Tandon - University of Arizona, USA

Ming Li - University of Arizona, USA

11:35

Anonymity Mixes as (Partial) Assembly Queues: Modeling and Analysis

Mehmet Aktas - Rutgers University, USA

Emina Soljanin - Rutgers University, USA

11:55

Private Authentication: Optimal Information Theoretic Schemes

Narges Kazempour - Sharif University of Technology, Iran

Mahtab Mirmohseni - Sharif University of Technology, Iran

Mohammad Reza Aref - Sharif University of Technology, Iran

MoPM1 Security and Privacy

Date : Monday, August 26

Location : Event Hall

Session Chair : Daniela Tuninetti - University of Illinois, Chicago, USA

14:20

Can Marton Coding Alone Ensure Individual Secrecy?

Jin Yeong Tan - University of Newcastle, Australia

Lawrence Ong - University of Newcastle, Australia

Behzad Asadi - University of Newcastle, Australia

14:40

Secrecy Capacity of a Gaussian Wiretap Channel with One-bit ADCs is Always Positive

Seung-Hyun Nam - POSTECH, Korea

Si-Hyeon Lee - POSTECH, Korea

15:00

Multiple Access Channels with Byzantine Users

Neha Sangwan - Tata Institute of Fundamental Research, India

Mayank Bakshi - The Chinese University of Hong Kong, Hong Kong

Bikash K. Dey - Indian Institute of Technology Bombay, India

Vinod M. Prabhakaran - Tata Institute of Fundamental Research, India

15:20

Private Pliable Index Coding

Tang Liu - University of Illinois, Chicago, USA

Daniela Tuninetti - University of Illinois, Chicago, USA

15:40

Private Authentication with Physical Identifiers Through Broadcast Channel Measurements

Onur Günlü - Technische Universität München, Germany

Rafael F. Schaefer - Technische Universität München, Germany

Gerhard Kramer - Technische Universität München, Germany

MoPM2 Algebraic Coding and Lattices

Date : Monday, August 26

Location : Rosa Huset, Lower Floor

Session Chair : Joseph Jean Boutros - Texas A&M University, USA

14:20

Design of Guruswami-Sudan List Decoding for Elliptic Codes

Li Chen - Sun Yat-sen University, P.R. China

Yunqi Wan - Sun Yat-sen University, P.R. China

Fanguo Zhang - Sun Yat-sen University, P.R. China

14:40

New Bounds for GLD Lattices and Codes

Maiara F. Bollauf - Texas A&M University at Qatar, Qatar

Joseph Jean Boutros - Texas A&M University, USA

Nordine Mir - Texas A&M University at Qatar, Qatar

15:00

On the Optimality of Gauss's Algorithm over Euclidean Imaginary Quadratic Fields

Christian Porter - Imperial College London, United Kingdom

Shanxiang Lyu - Imperial College London, United Kingdom

Cong Ling - Imperial College London, United Kingdom

15:20

Gabidulin Codes with Support Constraints

Hikmet Yildiz - California Institute of Technology, USA

Babak Hassibi - California Institute of Technology, USA

15:40

Fast Root Finding for Interpolation-Based Decoding of Interleaved Gabidulin Codes

Hannes Bartz - German Aerospace Center, Germany

Thomas Jerkovits - German Aerospace Center, Germany

Sven Puchinger - Technische Universität München, Germany

Johan S. H. Rosenkilde - Technical University of Denmark, Denmark

MoPM3 Multi Terminal Information Theory

Date : Monday, August 26

Location : Rosa Huset, Upper Floor

Session Chair : Victoria Kostina - California Institute of Technology, USA

14:20

Optimal Broadcast Rate of a Class of Two-Sender Unicast Index Coding Problems

Chinmayananda Arunachala - Indian Institute of Science, India

Vaneet Aggarwal - Purdue University, USA

B. Sundar Rajan - Indian Institute of Science, India

14:40

Capacity Results for Erasure Broadcast Channels with Intermittent Feedback

Alireza Vahid - University of Colorado Denver, USA

I-Hsiang Wang - National Taiwan University, Taiwan

Shih-Chun Lin - National Taiwan University of Science and Technology, Taiwan

15:00

Capacity of Wideband Multipath Fading Networks with Physically Degraded Broadcast

Diana C. González - Massachusetts Institute of Technology, USA

Salman Salamatian - Massachusetts Institute of Technology, USA

Michel Daoud Yacoub - State University of Campinas, Brazil

Muriel Médard - Massachusetts Institute of Technology, USA

15:20

Rate loss in the Gaussian CEO problem

Victoria Kostina - California Institute of Technology, USA

15:40

Achievable Rate-Distortion Region for Robust Distributed Source Coding

Arun Padakandla - University of Tennessee, USA

MoInv1 Entropy, Information and Control 1 - Invited Session

Date : Monday, August 26

Location : Rosa Huset, Lower Floor

Session Chair : Christoph Kawan - Ludwig-Maximilians-Universität München, Germany

16:20

On the continuity of the invariance entropy for hyperbolic linear control systems on Lie groups

Adriano Da Silva - University of Campinas, Brazil

16:40

Invariance pressure for linear discrete-time systems

Fritz Colonius - Augsburg University, Germany

Alexandre Santana - State University of Maringa, Brazil

Joao Cossich - State University of Maringa, Brazil

17:00

Coding theorems for non-stochastic information

Anshuka Rangi - University of California, San Diego, USA

Massimo Franceschetti - University of California, San Diego, USA

17:20

Stabilizing a linear system using phone calls

Mohammad Javad Khojasteh - University of California, San Diego, USA

Massimo Franceschetti - University of California, San Diego, USA

Gireeja Ranade - University of California, Berkeley, USA

17:40

Zero-Error Capacity of Multiple Access Channels via Nonstochastic Information

Girish N. Nair - University of Melbourne, Australia

Ghassen Zafzouf - University of Melbourne, Australia

Jamie S. Evans - University of Melbourne, Australia

MoInv2 Polar Codes - Invited Session

Date : Monday, August 26

Location : Rosa Huset, Upper Floor

Session Chair : Jinhong Yuan - University of New South Wales, Australia

16:20

Erasures in channel polarization

Mine Alsan - National University of Singapore, Singapore

16:40

Partially Information Coupled Bit-Interleaved Polar Coded Modulation for 16-QAM

Xiaowei Wu - University of New South Wales, Australia

Jinhong Yuan - University of New South Wales, Australia

17:00

Rate-Flexible Fast Polar Decoders

Seyyed Ali Hashemi - Stanford University, USA

Carlo Condo - Huawei Technologies Co. Ltd., France

Marco Mondelli - Stanford University, USA

Warren Gross - McGill University, Canada

17:20

Trellis-based decoding techniques for polar codes with large kernels

Peter Trifonov - Saint-Petersburg Polytechnic University & ITMO University, Russia

17:40

Polar Code Design Aspects and Future Challenge

Wen Tong - Huawei Technologies Canada Co., Ltd., Canada

Poster Session II

Date: Tuesday, August 27

Location : Event Hall

From the Spectrum of the Adjacency Matrix to the Spectrum of Directed Edge Matrix: Counting Cycles of a Bipartite Graph Through a Simple Equation*

Ali Dehghan - Carleton University, Canada

Amir Banihashemi - Carleton University, Canada

*Moved from Session WeAM1 on Wednesday to Poster Session II on Tuesday

Second-Order Asymptotics of the Continuous-Time Poisson Channel

Yuta Sakai - National University of Singapore, Singapore

Mladen Kovačević - University of Novi Sad, Serbia

Vincent Y. F. Tan - National University of Singapore, Singapore

Interval Algorithm for Random Number Generation: Information Spectral Approach

Shun Watanabe - Tokyo University of Agriculture and Technology, Japan

Te Sun Han - University of Electro-Communications, Japan

Strongly Secure Ramp Secret Sharing Schemes from Any Linear Secret Sharing Schemes

Reo Eriguchi - The University of Tokyo, Japan

Noboru Kunihiro - The University of Tokyo, Japan

On Characterization of Entropic Vectors at the Boundary of Almost Entropic Cones

Hitika Tiwari - Indian Institute of Technology Mandi, India

Satyajit Thakor - Indian Institute of Technology Mandi, India

An Upper Bound on the Capacity of the DNA Storage Channel

Andreas Lenz - Technische Universität München, Germany

Paul H. Siegel - University of California, San Diego, USA

Antonia Wachter-Zeh - Technische Universität München, Germany

Eitan Yaakobi - Technion, Israel

A Submodularity-based Clustering Algorithm for the Information Bottleneck and Privacy Funnel

Ni Ding - Data61, The Commonwealth Scientific and Industrial Research Organisation, Australia

Parastoo Sadeghi - The Australian National University, Australia

On Error Decoding of Locally Repairable and Partial MDS Codes

Lukas Holzbaur - Technische Universität München, Germany

Sven Puchinger - Technische Universität München, Germany

Antonia Wachter-Zeh - Technische Universität München, Germany

On Code Design for Wireless Channels with Additive Radar Interference

Federico Brunero - University of Illinois, Chicago, USA

Daniela Tuninetti - University of Illinois, Chicago, USA

Natasha Devroye - University of Illinois, Chicago, USA

Non-malleable Coding for Arbitrary Varying Channels

Fuchun Lin - Nanyang Technological University, Singapore

San Ling - NTU, Singapore

Reihaneh Safavi-Naini - University of Calgary, Canada

Huaxiong Wang - Nanyang Technological University, Singapore

Age of Information for Updates with Distortion

Melih Bastopcu - University of Maryland, USA

Sennur Ulukus - University of Maryland, USA

TuAM1 Coordination, Information and Statistics

Date: Tuesday, August 27

Location : Event Hall

Session Chair : Tobias J. Oechtering - KTH Royal Institute of Technology, Sweden

10:15

Some Results on Distributed Source Simulation with no Communication

Tomer Berg - Tel Aviv University, Israel

Ofer Shayevitz - Tel Aviv University, Israel

Young-Han Kim - UCSD, USA

Lele Wang - University of British Columbia, Canada

10:35

Coordination Coding with Causal Decoder for Vector-valued Witsenhausen Counterexample Setups

Tobias J. Oechtering - KTH Royal Institute of Technology, Sweden

Maël Le Treust - ETIS, Université Paris Seine, Université Cergy-Pontoise, ENSEA, CNRS, France

10:55

Fixed-Length Strong Coordination

Giulia Cervia - KTH Royal Institute of Technology, Sweden

Tobias J. Oechtering - KTH Royal Institute of Technology, Sweden

Mikael Skoglund - KTH Royal Institute of Technology, Sweden

11:15

Coordination via Shared Randomness

Gowtham R. Kurri - Tata Institute of Fundamental Research, India

Vinod M. Prabhakaran - Tata Institute of Fundamental Research, India

11:35

Learning and Adaptive Data Analysis via Maximal Leakage

Amedeo R. Esposito - EPFL, Switzerland

Michael Gastpar - EPFL, Switzerland

Ibrahim Issa - American University of Beirut, Lebanon

11:55

On the Information-Theoretic Limits of Noisy Sparse Phase Retrieval

Lan V. Truong - National University of Singapore, Singapore

Jonathan Scarlett - National University of Singapore, Singapore

TuAM2 Caching and Index Coding

Date: Tuesday, August 27

Location : Rosa Huset, Lower Floor

Session Chair : B. Sundar Rajan - Indian Institute of Science, India

10:15

On the Fundamental Limit of Coded Caching Systems with a Single Demand Type

Shuo Shao - Shanghai Jiaotong University, P.R. China

Jesús Gómez-Vilardebó - CTTC, Spain

Kai Zhang - Texas A&M University, USA

Chao Tian - Texas A&M University, USA

10:35

Coded Caching with Optimized Shared-Cache Sizes

Emanuele Parrinello - EURECOM, France

Petros Elia - EURECOM, France

10:55

Centralized Coded Caching with User Cooperation

Jiahui Chen - ShanghaiTech University, P.R. China

Haoyu Yin - ShanghaiTech University, P.R. China

Xiaowen You - ShanghaiTech University, P.R. China

Yanlin Geng - State Key Lab. of ISN, Xidian University, P.R. China

Youlong Wu - ShanghaiTech University, P.R. China

11:15

Multi-access coded caching: gains beyond cache-redundancy

Berksan Serbetci - EURECOM, France

Emanuele Parrinello - EURECOM, France

Petros Elia - EURECOM, France

11:35

Embedded Index Coding

Alexandra Porter - Stanford University, USA

Mary Wootters - Stanford University, USA

11:55

A Field-Size Independent Code Construction for Groupcast Index Coding Problems

Mahesh Babu Vaddi - Indian Institute of Science, India

B. Sundar Rajan - Indian Institute of Science, India

TuAM3 Coding for Memories

Date: Tuesday, August 27

Location : Rosa Huset, Upper Floor

Session Chair : Olgica Milenkovic - University of Illinois, Urbana-Champaign, USA

10:15

Coded Trace Reconstruction

Mahdi Cheraghchi - Imperial College London, United Kingdom

Ryan Gabrys - SPAWAR Pacific, USA

Olgica Milenkovic - University of Illinois, Urbana-Champaign, USA

João Ribeiro - Imperial College London, United Kingdom

10:35

A New Family of Constrained Codes with Applications in Data Storage

Ahmed Hareedy - Duke University, USA

Robert Calderbank - Duke University, USA

10:55

Increasing the Lifetime of Flash Memories Using Multi-Dimensional Graph-Based Codes

Ahmed Hareedy - Duke University, USA

Rohith Kuditipudi - Duke University, USA

Robert Calderbank - Duke University, USA

11:15

Iterative Programming of Noisy Memory Cells

Michal Horovitz - Tel-Hai College, Upper Galilee & The Galilee Research Institute - Migal, Israel

Eitan Yaakobi - Technion, Israel

Eyal En Gad - Micron Technology, USA

Jehoshua Bruck - California Institute of Technology, USA

11:35

Endurance-Limited Memories with Informed Decoder

Michal Horovitz - Tel-Hai College, Upper Galilee & The Galilee Research Institute - Migal, Israel

Yeow Meng Chee - National University of Singapore, Singapore

Alexander Vardy - University of California San Diego, USA

Van Khu Vu - Nanyang Technological University, Singapore

Eitan Yaakobi - Technion, Israel

11:55

Reconstruction and Error-Correction Codes for Polymer-Based Data Storage

Srilakshmi Pattabiraman - University of Illinois, Urbana-Champaign, USA

Ryan Gabrys - University of California, San Diego, USA

Olgica Milenkovic - University of Illinois, Urbana-Champaign, USA

TuPM1 Distributed Computing

Date: Tuesday, August 27

Location : Event Hall

Session Chair : Hessam Mahdavifar - University of Michigan, USA

14:20

Stochastic Gradient Coding for Flexible Straggler Mitigation in Distributed Learning

Rawad Bitar - Rutgers University, USA

Mary Wootters - Stanford University, USA

Salim El Rouayheb - Rutgers University, USA

14:40

Coded Distributed Computing: Performance Limits and Code Designs

Mohammad Vahid Jamali - University of Michigan, USA

Mahdi Soleymani - University of Michigan, USA

Hessam Mahdavifar - University of Michigan, USA

15:00

Collaborative Decoding of Polynomial Codes for Distributed Computation

Adarsh M. Subramaniam - Texas A&M University, USA

Anoosheh Heidarzadeh - Texas A&M University, USA

Krishna Narayanan - Texas A&M University, USA

15:20

Non-Colluding Attacks Identification in Distributed Computing

Arnav Solanki - University of Minnesota, USA

Martina Cardone - University of Minnesota, USA

Soheil Mohajer - University of Minnesota, USA

15:40

Degree Tables for Secure Distributed Matrix Multiplication

Rafael Lucas D'Oliveira - Rutgers University, USA

Salim El Rouayheb - Rutgers University, USA

Daniel Heinlein - Aalto University, Finland

David Karpuk - Universidad de los Andes, Colombia

TuPM2 Source Coding

Date: Tuesday, August 27

Location : Rosa Huset, Lower Floor

Session Chair : Photios A. Stavrou - KTH Royal Institute of Technology, Sweden

14:20

Block Source Coding with Sequential Encoding

Hamid Ghourchian - KTH Royal Institute of Technology, Sweden

Photios A. Stavrou - KTH Royal Institute of Technology, Sweden

Tobias J. Oechtering - KTH Royal Institute of Technology, Sweden

Mikael Skoglund - KTH Royal Institute of Technology, Sweden

14:40

Mismatched Guesswork and One-to-One Codes

Salman Salamatian - Massachusetts Institute of Technology, USA

Litian Liu - Massachusetts Institute of Technology, USA

Ahmad Beirami - Massachusetts Institute of Technology, USA

Muriel Médard - Massachusetts Institute of Technology, USA

15:00

On Enhancing the Fixed Block-Length Coding Scheme for Joint source-channel communication

Arun Padakandla - University of Tennessee, USA

15:20

An Explicit Construction of Optimal Streaming Codes for Channels with Burst and Arbitrary Erasures

Damian Dudzicz - EPFL, Switzerland

Silas L. Fong - University of Toronto, Canada

Ashish Khisti - University of Toronto, Canada

15:40

An Explicit Rate-Optimal Streaming Code for Channels with Burst and Arbitrary Erasures

Elad Domanovitz - Tel Aviv University, Israel

Silas L. Fong - University of Toronto, Canada

Ashish Khisti - University of Toronto, Canada

TuPM3 Detection, Estimation and Classification

Date: Tuesday, August 27

Location : Rosa Huset, Upper Floor

Session Chair : Alex Dytso - Princeton University, USA

14:20

Distributed Detection with Empirically Observed Statistics

Haiyun He - National University of Singapore, Singapore

Lin Zhou - University of Michigan, Ann Arbor

Vincent Y. F. Tan - National University of Singapore, Singapore

14:40

Sequential Classification with Empirically Observed Statistics

Mahdi Haghifam - University of Toronto, Canada

Vincent Y. F. Tan - National University of Singapore, Singapore

Ashish Khisti - University of Toronto, Canada

15:00

Properties of The Conditional Mean Estimator in Poisson Noise

Alex Dytso - Princeton University, USA

H. Vincent Poor - Princeton University, USA

15:20

The Metagenomic Binning Problem: Clustering Markov Sequences

Grant Greenberg - University of Illinois, Urbana-Champaign, USA

Ilan Shomorony - University of Illinois, Urbana-Champaign, USA

15:40

Coding for Crowdsourced Classification with XOR Queries

James (Chin-Jen) Pang - University of Michigan, USA

Hessam MahdaviFar - University of Michigan, USA

S. Sandeep Pradhan - University of Michigan, USA

TuInV1 Privacy and Security 1 - Invited Session

Date: Tuesday, August 27

Location : Rosa Huset, Lower Floor

Session Chair : Ravi Tandon - University of Arizona, USA

16:20

On the Upload versus Download Cost for Secure and Private Matrix Multiplication

Wei-Ting Chang - University of Arizona, USA

Ravi Tandon - University of Arizona, USA

16:40

Improved Storage for Efficient Private Information Retrieval

Karim A. Banawan - Alexandria University, Egypt

Batuhan Arasli - University of Maryland, USA

Sennur Ulukus - University of Maryland, USA

17:00

Multi-library Coded Caching with Partial Secrecy

Mireille Sarkiss - University of California, San Diego, USA

Michèle Wigger - Télécom ParisTech, France

17:20

Secure Caching and Delivery for Combination Networks with Asymmetric Connectivity

Ahmed A. Zewail - Pennsylvania State University, USA

Aylin Yener - Pennsylvania State University, USA

17:40

Relaxed Wyner's Common Information

Michael Gastpar - EPFL, Switzerland

Erixhen Sula - EPFL, Switzerland

TuInV2 Entropy, Information and Control 2 - Invited Session

Date: Tuesday, August 27

Location : Rosa Huset, Upper Floor

Session Chairs : Victoria Kostina - California Institute of Technology, USA
Takashi Tanaka - University of Texas, Austin, USA

16:20

On Optimal Jamming in Strategic Communication

Emrah Akyol - Binghamton University - SUNY, USA

16:40

Generic Variance Bounds on Estimation and Prediction Errors in Time Series Analysis: An Entropy Perspective

Song Fang - KTH Royal Institute of Technology, Sweden

Mikael Skoglund - KTH Royal Institute of Technology, Sweden

Karl Henrik Johansson - KTH Royal Institute of Technology, Sweden

Hideaki Ishii - Tokyo Institute of Technology, Japan

Quanyan Zhu - New York University, USA

17:00

Bidirectional Information Flow and the Roles of Privacy Masks in Cloud-Based Control

Ali Reza Pedram - University of Texas, Austin, USA

Takashi Tanaka - University of Texas, Austin, USA

Matthew Hale -University of Florida, USA

17:20

Fundamental limits of distributed tracking

Victoria Kostina - California Institute of Technology, USA

Poster Session III

Date: Wednesday, August 28

Location : Event Hall

On the Computational Complexity of Finding Bipartite Graphs with a Small Number of Short Cycles and Large Girth*

Ali Dehghan - Carleton University, Canada

Amir Banihashemi - Carleton University, Canada

*Moved from Poster Session III on Wednesday to Poster Session I on Monday

On the Minrank of Symmetric and Neighboring Side-information Index Coding Problems

Mahesh Babu Vaddi - Indian Institute of Science, India

B. Sundar Rajan - Indian Institute of Science, India

Covariance Evolution for Spatially “Mt. Fuji” Coupled LDPC Codes

Yuta Nakahara - Waseda University, Japan

Toshiyasu Matsushima - Waseda University, Japan

Practical Universal Data Exchange using Polar Codes

Soumya Subhra Banerjee - Indian Institute of Science, India

Himanshu Tyagi - Indian Institute of Science, India

Optimizing Polar Codes Compatible with Off-the-Shelf LDPC Decoders

Moustafa Ebada - University of Stuttgart, Germany

Ahmed Elkelesh - University of Stuttgart, Germany

Stephan Ten Brink - University of Stuttgart, Germany

SC-Flip Decoding of Polar Codes with High Order Error Correction Based on Error Dependency

Carlo Condo - Huawei Technologies Co. Ltd., France

Valerio Bioglio - France Research Center, Huawei Technologies Co. Ltd., Italy

Ingmar Land - Huawei Technologies France & Paris Research Centre, France

Improved decoding of second-order Reed-Muller codes

Kirill Ivanov - EPFL, Switzerland

Ruediger L. Urbanke - EPFL, Switzerland

Coset Probability based Majority-logic Decoding for Non-binary LDPC Codes

Viduranga Wijekoon - Monash University, Australia

Emanuele Viterbo - Monash University, Australia

Yi Hong - Monash University, Australia

Shuiyin Liu - Holmes Institute, Australia

Rino Micheloni - Microsemi, Italy

Alessia Marelli - Microsemi, Italy

Enhanced Quasi-Maximum Likelihood Decoding of Short LDPC Codes Based on Saturation

Peng Kang - University of New South Wales, Australia

Yixuan Xie - University of New South Wales, Australia

Lei Yang - University of New South Wales, Australia

Chen Zheng - Huawei Technology Co. Ltd., P.R. China

Jinhong Yuan - University of New South Wales, Australia

Yuejun Wei - Huawei Technology Co. Ltd., P.R. China

Deep Learning Assisted Sum-Product Detection Algorithm for Faster-than-Nyquist Signaling

Bryan Liu - University of New South Wales, Australia

Shuangyang Li - University of New South Wales, Australia & Xidian University, P.R. China

Yixuan Xie - University of New South Wales, Australia

Jinhong Yuan - University of New South Wales, Australia

WeAM1 Graph Based Codes and Message Passing

Date: Wednesday, August 28

Location : Event Hall

Session Chair : Lara Dolecek - UCLA, USA

10:15

From the Spectrum of the Adjacency Matrix to the Spectrum of Directed Edge Matrix: Counting Cycles of a Bipartite Graph Through a Simple Equation*

Ali Dehghan - Carleton University, Canada

Amir Banihashemi - Carleton University, Canada

*Moved from Session WeAM1 on Wednesday to Poster Session II on Tuesday

10:35

Small stopping sets in projective low-density parity-check codes

Yuichiro Fujiwara - Chiba University, Japan

Yu Tsunoda - Chiba University, Japan

10:55

Dynamics of Damped Approximate Message Passing Algorithms

Kazushi Mimura - Hiroshima City University, Japan

Junichi Takeuchi - Kyushu University, Japan

11:15

Sparse Graph Codes for Non-adaptive Quantitative Group Testing

Esmail Karimi - Texas A&M University, USA

Fatemeh Kazemi - Texas A&M University, USA

Anoosheh Heidarzadeh - Texas A&M University, USA

Krishna Narayanan - Texas A&M University, USA

Alex Sprintson - Texas A&M University, USA

11:35

LDPC Code Design for Delayed Bit-Interleaved Coded Modulation

Yihuan Liao - The University of New South Wales, Australia

Lei Yang - Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, P.R. China

Jinhong Yuan - University of New South Wales, Australia

Kechao Huang - Huawei Technologies Co., Ltd., P.R. China

Raymond Leung - Huawei Technologies Co. Ltd., P.R. China

Junyi Du - Southwest China Institute of Electronic Technology, P.R. China

Date: Wednesday, August 28

Location : Rosa Huset, Lower Floor

Session Chair : Matthieu Bloch - Georgia Institute of Technology, USA

10:15

New Upper Bounds on the Capacity of Primitive Diamond Relay Channels

Xiugang Wu - University of Delaware, USA

Ayfer Özgür - Stanford University, USA

Michael Peleg - Rafael Ltd. & Technion - Israel Institute of Technology, Electrical Engineering,
Israel

Shlomo (Shitz) Shamai - The Technion, Israel

10:35

Channel Resolvability with a Full-Duplex Decode-and-Forward Relay

Noha Helal - University of Texas, Dallas, USA

Matthieu Bloch - Georgia Institute of Technology, USA

Aria Nosratinia - University of Texas, Dallas, USA

10:55

On The Stability Region of the Layered Packet Erasure Broadcast Channel with Output Feedback

Siyao Li - University of Illinois, Chicago, USA

Hulya Seferoglu - University of Illinois, Chicago, USA

Daniela Tuninetti - University of Illinois, Chicago, USA

Natasha Devroye - University of Illinois, Chicago, USA

11:15

Mixed Delay Constraints on a Fading C-RAN Uplink

Homa Nikbakht - Télécom ParisTech, France

Michèle Wigger - Télécom ParisTech, France

Walid Hachem - CNRS / LIGM - Université Paris Est Marne-la-Vallée, France

Shlomo (Shitz) Shamai - The Technion, Israel

11:35

Closed-Form Expression for the Average Age of Information in a Multi-Source M/G/1 Queueing Model

Mohammad Moltafet - University of Oulu, Finland

Markus Leinonen - University of Oulu, Finland

Marian Codreanu - University of Oulu, Finland

WeAM3 Error Exponents

Date: Wednesday, August 28

Location : Rosa Huset, Upper Floor

Session Chair : Giuseppe Durisi - Chalmers University of Technology, Sweden

10:15

Error Exponents of Typical Random Trellis Codes

Neri Merhav - The Technion, Israel

10:35

Error exponents of typical random codes of source-channel coding

Ran Averbuch - The Technion, Israel

Neri Merhav - The Technion, Israel

10:55

Random Coding Error Exponent for the Bee-Identification Problem

Anshoo Tandon - National University of Singapore, Singapore

Vincent Y. F. Tan - National University of Singapore, Singapore

Lav R. Varshney - University of Illinois, Urbana-Champaign, USA

11:15

Optimal Rate-Exponent Region for a Class of Hypothesis Testing Against Conditional Independence Problems

Abdellatif Zaidi - Université Paris-Est, France

Inaki Estella - Huawei Technologies Co., Ltd., France

11:35

On the Nonasymptotic Performance of Variable-Length Codes with Noisy Stop Feedback

Johan Östman - Chalmers University of Technology, Sweden

Rahul Devassy - Chalmers University of Technology, Sweden

Giuseppe Durisi - Chalmers University of Technology, Sweden

Erik G. Ström - Chalmers University of Technology, Sweden

WePM1 Coding Theory and Practice

Date: Wednesday, August 28

Location : Event Hall

Session Chair : David G. M. Mitchell - New Mexico State University, USA

14:00

Channel Coding at Low Capacity

Mohammad Fereydounian - University of Pennsylvania, USA

Mohammad Vahid Jamali - University of Michigan, USA

Hamed Hassani - University of Pennsylvania, USA

Hessam Mahdaviifar - University of Michigan, USA

14:20

A New Importance Sampling Algorithm for Fast Simulation of Linear Block Codes over BSCs

Jinzhe Pan - Hong Kong University of Science and Technology, Hong Kong

Wai Ho Mow - Hong Kong University of Science and Technology & HKUST, Hong Kong

14:40

Codebooks of Complex Lines Based on Binary Subspace Chirps

Olav Tirkkonen - Aalto University, Finland

Robert Calderbank - Duke University, USA

15:00

Successive-Cancellation Decoding of Linear Source Code

Jun Muramatsu - NTT Corporation, Japan

15:20

Neural Decoder for Topological Codes using Pseudo-Inverse of Parity Check Matrix

Chaitanya Chinni - YNOS Venture Engine CC Pvt. Ltd., India

Abhishek Kulkarni - Indian Institute of Technology, Madras, India

Dheeraj M. Pai - Indian Institute of Technology, Madras, India

Kaushik Mitra - Indian Institute of Technology, Madras, India

Pradeep K. Sarvepalli - Indian Institute of Technology Madras, India

WePM2 Capacity and Mutual Information

Date: Wednesday, August 28

Location : Rosa Huset, Lower Floor

Session Chair : Holger Boche - Technische Universität München, Germany

14:00

Capacity Results for Discrete Memoryless Channels in the Finite Blocklength Regime

Yasutada Oohama - University of Electro-Communications, Japan

14:20

On the Structure of the Capacity Formula for General Finite State Channels with Applications

Holger Boche - Technische Universität München, Germany

Rafael F. Schaefer - Technische Universität München, Germany

H. Vincent Poor - Princeton University, USA

14:40

On the Fundamental Limits of Cooperative Multiple-Access Channels with Distributed CSIT

Lorenzo Miretti - EURECOM, France

Paul De Kerret - EURECOM, France

David Gesbert - EURECOM, France

15:00

On the Outage-Constrained Capacity of Skip-Sliding Window Codes

Ting-Yi Wu - Sun Yat-Sen University, P.R. China

Anshoo Tandon - National University of Singapore, Singapore

Mehul Motani - National University of Singapore, Singapore

Lav R. Varshney - University of Illinois, Urbana-Champaign, USA

15:20

Channel Ordering and Supermodularity

Arthur Américo - Queen Mary University of London, United Kingdom

Pasquale Malacaria - Queen Mary University of London, United Kingdom

Arman (MHR) Khouzani - Queen Mary University of London, United Kingdom

Date: Wednesday, August 28

Location : Rosa Huset, Upper Floor

Session Chair : Martina Cardone - University of Minnesota, USA

14:00

On Secure Capacity of Multiple Unicast Traffic over Separable Networks

Gaurav Kumar Agarwal - University of California, Los Angeles, USA

Martina Cardone - University of Minnesota, USA

Christina Fragouli - UCLA, USA

14:20

Transforming an arbitrary code for the wiretap channel of type I into a code for the wiretap channel of type II

Eric Graves - Army Research Lab, USA

Allison Beemer - New Jersey Institute of Technology, USA

14:40

A Modular Semantically Secure Wiretap Code with Shared Key for Weakly Symmetric Channels

Setareh Sharifian - University of Calgary, Canada

Reihaneh Safavi-Naini - University of Calgary, Canada

15:00

Keyless Covert Communication in the Presence of Non-causal Channel State Information

Hassan ZivariFard - University of Texas, Dallas, USA

Matthieu Bloch - Georgia Institute of Technology, USA

Aria Nosratinia - University of Texas, Dallas, USA

15:20

Forward Reconciliation for Covert Key Generation

Ishaque Ashar Kadampot - Georgia Institute of Technology, USA

Matthieu Bloch - Georgia Institute of Technology, USA

WelInv1 Graph Based Codes and Spatial Coupling - Invited Session

Date: Wednesday, August 28

Location : Rosa Huset, Lower Floor

Session Chair : Daniel Costello - University of Notre Dame, USA

16:00

A Finite-Length Construction of Irregular Spatially-Coupled Codes

Homa Esfahanizadeh - University of California, Los Angeles, USA

Ruiyi Wu - UCLA, USA

Lara Dolecek - UCLA, USA

16:20

Spatially Coupled LDPC Codes for Joint Source-Channel Coding

David G. M. Mitchell - New Mexico State University, USA

Ahmad Golmohammadi - New Mexico State University, USA

16:40

Spatially Coupled LDPC Codes with Non-uniform Coupling for Improved Decoding Speed

Laurent Schmalen - Karlsruhe Institute of Technology (KIT), Germany

Vahid Aref - Nokia Bell Labs, Germany

17:00

Spatially Coupled Sparse Regression Codes with Sliding Window AMP Decoding

Cynthia Rush - Columbia University, USA

Kuan Hsieh - University of Cambridge, United Kingdom

Ramji Venkataramanan - University of Cambridge, United Kingdom

17:20

Failure repair in LDPC-based distributed storage: Is there any chance to be lazy?

Muhammad Ali - ETIS, Université Paris Seine, Université Cergy-Pontoise, ENSEA, CNRS, France

Iryna Andriyanova - ETIS, Université Paris Seine, Université Cergy-Pontoise, ENSEA, CNRS
France

Alexandre Graell i Amat - Chalmers University of Technology, Sweden

WeiInv2 Privacy and Security 2 - Invited Session

Date: Wednesday, August 28

Location : Rosa Huset, Upper Floor

Session Chair : Chao Tian - Texas A&M University, USA

16:00

Private Information Delivery

Hua Sun - University of North Texas, USA

16:20

On the Capacity of Private Information Retrieval from Coded, Colluding, and Adversarial Servers

Lukas Holzbaur - Technische Universität München, Germany

Ragnar Freij-Hollanti - Technische Universität München, Germany

Camilla Hollanti - Aalto University, Finland

16:40

Improved Private Information Retrieval for Coded Storage From Code Decomposition

Hsuan-Yin Lin - Simula UiB, Norway

Siddhartha Kumar - Simula UiB AS, Norway

Eirik Rosnes - Simula UiB, Norway

Alexandre Graell i Amat - Chalmers University of Technology, Sweden

17:00

Preserving ON-OFF Privacy for Past and Future Requests

Fangwei Ye - Rutgers University, USA

Carolina Naim - Rutgers University, USA

Salim El Rouayheb - Rutgers University, USA

17:20

Weakly Secure Symmetric Multilevel Diversity Coding

Tao Guo - Texas A&M University, USA

Chao Tian - Texas A&M University, USA

Tie Liu - Texas A&M University, USA

Raymond W. Yeung - The Chinese University of Hong Kong, Hong Kong



SOCIAL PROGRAM

WELCOME RECEPTION

Date Sunday August 25

Time 19:00 - 22:00

Location The Gotland museum - <https://www.gotlandsmuseum.se>

The reception will feature drinks and canapés. Participants will be given the opportunity to walk around the museum and learn more about Gotland's rich history, from its first inhabitants, through the Viking age and the medieval period to the present.

CITY WALKING TOUR

Date Monday August 26

Time 18:15 (estimated duration 1:30h)

Meeting point Outside the Event Hall

A guided tour of the city will be offered to all ITW participants. Visby is arguably the best-preserved medieval city of Scandinavia, and the city walk will make stops at some of the most interesting historical building and ruins of the inner city enclosed by the 3.4 km city wall.

WORKSHOP BANQUET

Date Tuesday August 27

Time 19:00 - 22:00

Location Donners Event Hall - <http://www.donnersevent.se>

The banquet will feature a three-course, locally and seasonally inspired, dinner.

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