



ITCS 2015

Innovations in Theoretical Computer Science

11-13.1.2015

David Lopatie Conference Centre, Weizmann Institute of Science

SUNDAY January 11th 2015

SESSION 1 (9:00-10:45)

Interactive Coding for Multiparty Protocols

Abhishek Jain; Yael Tauman Kalai; Allison Lewko

Maximal Noise in Interactive Communication over Erasure Channels and Channels with Feedback

Klim Efremenko; Ran Gelles; Bernhard Haeupler

Simulating Noisy Channel Interaction

Mark Braverman; Jieming Mao

Deterministic Rateless Codes for BSC

Benny Applebaum; Liron David; Guy Even

10:45 COFFEE

SESSION 2 (11:10-12:55)

Homophily and the Glass Ceiling Effect in Social Networks

Chen Avin; Barbara Keller; Zvi Lotker; Claire Mathieu; David Peleg; Yvonne-Anne Pignolet

Dynamic Models of Reputation and Competition in Job-Market Matching

Jon Kleinberg; Sigal Oren

Voting with Coarse Beliefs

Samantha Leung; Edward Lui; Rafael Pass

Complex Contagions in Kleinberg's Small World Model

Roozbeh Ebrahimi; Jie Gao; Golnaz Ghasemiesfeh; Grant Schoenebeck

12:55 LUNCH

SESSION 3 (14:15-16:00)

Natural Selection as an Inhibitor of Genetic Diversity

Ruta Mehta; Ioannis Panageas; Georgios Piliouras

Fractal structures in Adversarial Prediction

Rina Panigrahy; Preyas Popat

On Learning Mixture Models for Permutations

Flavio Chierichetti; Anirban Dasgupta; Ravi Kumar; Silvio Lattanzi

Restricted Distribution Automatizability in PAC-Semantics

Brendan Juba

16:00 COFFEE

SESSION 4 (16:25-18:10)

An entangled-prover interactive proof system for the local Hamiltonian problem

Joseph Fitzsimons; Thomas Vidick

Zero-Information Protocols and Unambiguity in Arthur-Merlin Communication

Mika Goos; Toniann Pitassi; Thomas Watson

Information Causality, Szemerédi-Trotter and algebraic variants of CHSH

Mohammad Bavarian; Peter W. Shor

Non-Interactive Proofs of Proximity

Tom Gur; Ron D Rothblum

18:10 Dinner

19:30-21:30 Meet the new Innovators

MONDAY January 12th 2015

SESSION 5 (9:00-10:45)

Arithmetic Cryptography

Benny Applebaum; Jonathan Avron; Christina Brzuska

The Hidden Communication Graph Model: Communication Locality and Optimal Resiliency with Adaptive Faults

Nishanth Chandran; Wutichai Chongchitmate; Juan A. Garay; Shafi Goldwasser; Rafail Ostrovsky; Vassilis Zikas

On The Communication Complexity of Secure Function Evaluation with Long Output

Pavel Hubacek; Daniel Wichs

Privacy-Preserving Public Information for Sequential Games

Avrim Blum; Jamie Morgenstern; Ankit Sharma; Adam Smith

10:45 COFFEE

SESSION 6 (11:10-12:55)

Uniform Sampling for Matrix Approximation

Michael B. Cohen; Yin Tat Lee; Cameron Musco; Christopher Musco; Richard Peng; Aaron Sidford

Relax, no need to round: integrality of clustering formulations

Pranjal Awasthi; Afonso S. Bandeira; Moses Charikar; Ravishankar Krishnaswamy; Soledad Villar; Rachel Ward

On Multiplicative Weight Updates for Concave and Submodular Function Maximization

Chandra Chekuri; T.S. Jayram; Jan Vondrak

Robust Hierarchical k -Center Clustering

Silvio Lattanzi; Stefano Leonardi; Vahab Mirrokni; Ilya Razenshteyn

12:55 LUNCH

SESSION 7 (14:00-15:00)

Computing on the edge of chaos: structure and randomness in encrypted computation

Craig Gentry - Keynote Speaker

15:00 COFFEE

(15:20-16:40) SESSION 8

The Computational Benefit of Correlated Instances

Irit Dinur; Shafi Goldwasser; Huijia Lin

Why are images smooth?

Uriel Feige

A Physically Universal Cellular Automaton

Luke Schaeffer

16:40 BRIEF BREAK

SESSION 9 (16:50-18:10)

A New Approach to the Sensitivity Conjecture

Justin Gilmer; Michal Koucký; Michael Saks

Standard Simplices and Pluralities are Not the Most Noise Stable

Steven Heilman; Elchanan Mossel; Joe Neeman

Communication with Imperfectly Shared Randomness

Clement Louis Canonne; Venkatesan Guruswami; Raghu Meka; Madhu Sudan

19:15 Bus ride to Tel Aviv

20:00 Dinner at Casis restaurant

TUESDAY January 13th 2015

SESSION 10 (9:00-10:45)

The Circuit-Input Game, Natural Proofs, and Testing Circuits with Data

Brynmor Chapman; Ryan Williams

Separation between Estimation and Approximation

Uriel Feige; Shlomo Jozeph

Deterministic Extractors for Additive Sources

Abhishek Bhowmick; Ariel Gabizon; Thai Hoang Le; David Zuckerman

It'll probably work out: improved list-decoding through random operations

Atri Rudra; Mary Wootters

10:45 COFFEE

SESSION 11 (11:10-12:55)

Verifiably Truthful Mechanisms

Simina Brânzei; Ariel D. Procaccia

Mechanism Design with Strategic Mediators

Moshe Babaioff; Moran Feldman; Moshe Tennenholtz

Accuracy for Sale: Aggregating Data with a Variance Constraint

Rachel Cummings; Katrina Ligett; Aaron Roth; Zhiwei Steven Wu; Juba Ziani

Better Outcomes from More Rationality

Jing Chen; Silvio Micali; Rafael Pass

12:55 LUNCH

SESSION 12 (14:15-16:00)

Direct Sum Testing

Roei David; Irit Dinur; Elazar Goldenberg; Guy Kindler; Igor Shinkar

On Sample-Based Testers

Oded Goldreich; Dana Ron

Ip Testing and Learning of Discrete Distributions

Bo Waggoner

Sunflowers and Testing Triangle-Freeness of Functions

Ishay Haviv; Ning Xie

16:00 COFFEE

SESSION 13 (16:25-17:45)

Sketching Cuts in Graphs and Hypergraphs

Dmitry Kogan; Robert Krauthgamer

Very sparse additive spanners and emulators

Greg Bodwin; Virginia Vassilevska Williams

Any monotone property of k -uniform hypergraphs is weakly evasive

Timothy J. F. Black

Program Chair:

Tim Roughgarden

Program Committee:

Benny Applebaum, Avrim Blum, Costis Daskalakis, Uriel Feige, Vitaly Feldman, Parikshit Gopalan, Bernhard Haeupler, Stefano Leonardi, Tal Malkin, Nicole Megow, Michael Mitzenmacher, Noam Nisan, Ryan O'Donnell, Rafael Pass, Dana Ron, Guy Rothblum, Michael Saks, Leonard Schulman, C. Seshadhri, Jonathan Ullman, Paul Valiant, Thomas Vidick, Nisheeth Vishnoi, Mihalis Yannakakis

Organizing Committee:

Irit Dinur, Shafi Goldwasser, Moni Naor

www.wisdom.weizmann.ac.il/~naor/itcs2015_main.html

