2023 Croucher Summer Course in Information Theory

Course Program

14–18 August 2023

C. W. Chu College

The Chinese University of Hong Kong

Director: Prof. Pascal Vontobel (CUHK)

Co-Director: Prof. Sidharth Jaggi (University of Bristol)

Croucher Foundation
裘槎基金會

香港中文大學
The Chinese University of Hong Kong

Schedule

	Monday, Aug. 14	Tuesday, Aug. 15	Wednesday, Aug. 16	Thursday, Aug. 17	Friday, Aug. 18
07:00-08:30	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
08:30-09:25	Arnab Bhattacharyya	Arnab Bhattacharyya	Arnab Bhattacharyya	Farzan Farnia	Farzan Farnia
09:25-09:40	Discussion	Discussion	Discussion	Discussion	Discussion
09:40-10:00	Break	Break	Break	Break	Break
10:00-10:55	Amin Gohari	Irit Dinur	Irit Dinur	Arnab Bhattacharyya	Lara Dolecek
10:55-11:10	Discussion	Discussion	Discussion	Discussion	Discussion
11:10-11:30	Break	Break	Break	Break	Break
11:30-12:25	Farzan Farnia	Farzan Farnia	Amin Gohari	Amin Gohari	Amin Gohari
12:25-12:50	Discussion	Discussion	Discussion	Discussion	Discussion
12:50-14:30	Lunch	Lunch	Lunch	EXCURSION to Po Toi Island (+ Lunch/Dinner)	Wrap up / Lunch / Farewell
14:30-15:25	Lara Dolecek	Lara Dolecek	Lara Dolecek		
15:25-15:40	Discussion	Discussion	Discussion		
15:40-16:00	Break	Break	Break		
16:00-16:55	Irit Dinur	Irit Dinur	MINI-EXCURSION to Tsim Sha Tsui (+ Banquet)		
16:55-17:10	Discussion	Discussion			
17:10-18:30	Break	Break			
18:30-19:15	Poster Session 1	Poster Session 3			
19:15-19:45	Buffet Dinner	Buffet Dinner			
19:45-20:30	Poster Session 2	Poster Session 4			

Additional events:

Sunday, August 13	15:00–17:00	Check in at CWC College	
Sunday, August 13	18:00–18:15	Welcome session	Activities Room, 2nd Floor, CWC College
Sunday, August 13	18:15–19:30	Campus tour plus walk to restaurant	Starting Point: Activities Room, 2nd Floor, CWC College
Sunday, August 13	19:30–21:30	Welcome dinner	Tom Bar & Grill, Hong Kong Science Park
Friday, August 18	15:00–17:00	Check out out from CWC College (first option)	
Saturday, August 19	09:00–12:00	Check out out from CWC College (second option)	Saturday breakfast will be handed out at noon-time on Friday

Locations:

Lecture and Discussion sessions	Activities Room, 2nd Floor	CWC College
Poster sessions	Dining Hall, Ground Foor	CWC College
Breakfasts	Dining Hall, 1st Floor	CWC College
Lunches	Dining Hall, Ground Foor	CWC College
Dinners on Monday and Tuesday	Dining Hall, Ground Foor	CWC College
Breaks between lectures	Activities Room, 2nd Floor	CWC College
Room for meetings, checking email, etc.	Seminar Room, 1st Floor	CWC College
Meeting point for excursions on Wednesday and Thursday	Dining Hall, Ground Foor	CWC College

Wi-Fi Account for CSCIT 2023 participants:

Wi-Fi SSID	CUguest
Login User ID	cscit23@conference.cuhk.edu.hk
Login Password	39438385Aa@

CUHK staff and students: please use your own ITSC account to connect to the Internet.

Poster Session 1 (Monday, 14 August 2023, 18:30–19:15)

Name - First	Name - Last	University / Organization	Supervisor	Poster title
Yanbo	Chen	University of Ottawa	Andrej Bogdanov	Efficient Lattice-Based Two-Round Multi-Signature
Xiwei	Cheng	The Chinese University of Hong Kong	Sidharth Jaggi	Generalized Group Testing
Yujun	Huang	Tsinghua University	Shu-Tao Xia	Learned Distributed Image Compression with Multi-Scale Patch Matching in Feature Domain
Zhengyi	Jiang	Tsinghua University	Zhongyi Huang	An Efficient Piggybacking Design with Lower Repair Bandwidth and Lower Sub-packetization
Xinyi	Sui	Beijing University of Posts and Telecommunications	Zhongwei Si	Non-Orthogonal Multiple Access via Non-binary Factor Graphs
Yao	Tian	Nankai University	Fangwei Fu	Code-based Distributed Computing (tutorial-style)
Shuche	Wang	National University of Singapore	Vincent Y. F. Tan	Codes for Correcting t Limited-Magnitude Sticky Deletions
Junxi	Wu	Nankai University	Shu-Tao Xia	Universal Image Restoration via Task-Adaptive Diffusion Model with Adapters
Zhuangfei	Wu	Beihang University	Lin Bai	Achievable Refined Asymptotics for Successive Refinement Using Gaussian Codebooks
Yichong	Xia	The Chinese University of Hong Kong, Shenzhen	Bin Chen	Multi-Scale Architectures Matter: On the Adversarial Robustness of Flow-based Lossless Compression
Chao	Zhao	City University of Hong Kong	Chung Chan	Beyond Maximal Densest Subgraphs: A General Framework for Information Density
Junda	Zhou	The Chinese University of Hong Kong	Cheuk Ting LI	Randomly-stopped secret key agreement

Poster Session 2 (Monday, 14 August 2023, 19:45–20:30)

Name - First	Name - Last	University / Organization	Supervisor	Poster title
Yunlong	Hou	National University of Singapore	Vincent Tan	Probably Anytime-Safe Stochastic Combinatorial Semi-Bandits
Wenbo	Huang	Huazhong University of Science and Technology	Kai Wan	Fundamental limits of distributed linearly separable computation under cyclic assignment [no poster]
Chin Wa	Lau	The Chinese University of Hong Kong	Chandra Nair	Information Inequalities via Ideas from Additive Combinatorics
Shaocheng	Liu	Xidian University, China	Qi Chen	Entropy Functions on Two-Dimensional Faces of Polymatroidal Region of Degree Four
Chun Hei Michael	Shiu	The Chinese University of Hong Kong	Chandra Nair	New Observations in Marton's Inner Bound on General Broadcast Channel
Rina	Su	University of Science and Technology Beijing	Qifu Tyler Sun	Completion Delay of Random Linear Network Coding in Full-Duplex Relay Networks
Ruoqin	Tang	City University of Hong Kong	Chung Chan	Effective planning under partial observability
Xu	Wang	City University of Hong Kong	Chung Chan	Kernel Embedding Matching for f-divergence Neural Estimation
Bolin	Wu	Beijing University of Posts and Telecommunications	Kai Niu	Conditional Entropy-Based Construction of Multilevel Polar-Coded Modulation with Probabilistic Shaping
Yiqian	Zhang	Sun Yat-sen University	Congduan Li	On Symmetric Multilevel Diversity Coding System with Linear Computations
Qin	Zhou	Nankai University	Fangwei Fu	Coding Schemes for Relay Channels

Poster Session 3 (Tuesday, 15 August 2023, 18:30–19:15)

Name - First	Name - Last	University / Organization	Supervisor	Poster title
Xiaohong	Cai	The Chinese University of Hong Kong	Raymond W. Yeung	Network-coding aware multipath routing and channel allocation in wireless mesh network
Yuekai	Cai	Beijing University of Posts and Telecommunications	Chao Dong	Expectation Propagation Detection for Hybrid Modulation in MU-MIMO
Hongji	Cui	Beijing University of Posts and Telecommunications	Kai Niu	Power-Domain Polar Coded NOMA Joint Alternating Optimization
Yijun	Fan	The Chinese University of Hong Kong	Raymond W. Yeung	Reliable Throughput of Generalized Collision Channel without Synchronization
Yifan	Feng	Chongqing University	Zhengchuan Chen	Irregular Repetition Slotted ALOHA Scheme with Short Packets under Rayleigh Fading Channels
Chen-Hao	Hsiao	National Taiwan University	I-Hsiang Wang	Joint Clustering and Ranking from Heterogeneous Pairwise Comparisons
Yuwen	Huang	The Chinese University of Hong Kong	Pascal O. Vontobel	Bounding the Permanent of a Non-negative Matrix via its Degree-M Bethe and Sinkhorn Permanents
Zhongtian	Ma	Northwestern Polytechnical University	Zhen Wang	Matrix Completion with Hypergraph Side-information: Information-theoretic Limits and Efficient Algorithms
Shiyu	Qin	Harbin Institute of Technology, Shenzhen	Bin Chen	Perceptual Image Compression via Cross-modal Side Information
Dan	Song	Sun Yat-sen University	Congduan Li	Energy-Efficient Trajectory Design and Unsupervised Clustering for UAV-Aided Fair Data Collections with Dense Ground Users
Bin	Yu	Tsinghua University	Hanxu Hou	Product-Matrix Construction of Minimum Storage Rack-aware Regenerating Codes
Jinpei	Zhao	The Chinese University of Hong Kong	Chandra Nair	A New Upper Bound on Simonyi's Conjecture

Poster Session 4 (Tuesday, 15 August 2023, 19:45–20:30)

Name - First	Name - Last	University / Organization	Supervisor	Poster title
Jiajun	Chen	City University of Kong Kong	Albert Sung	Heterogeneity Shifts the Storage-Computation Tradeoff in Secure Multi-Cloud Systems
Yulin	Chen	The Chinese University of Hong Kong	Raymond W. Yeung	Braid Groups and Permutation Group Codes
Jun	Diao	Beihang University	Lin Zhou	Achievable Error Exponents for Almost Fixed-Length M-ary Hypothesis Testing
Vanlalruata	Ralte	IIT Kharagpur	Amitalok J. Budkuley	Distributed Sampling and Detection of Poisson Processes
Hao	Shi	Tsinghua University	Hanxu Hou	New Piggybacking Codes with Lower Repair Bandwidth for Any Single-Node Failure
Daisuke	Takeuchi	Tokyo University	Shun Watanabe	Tight Exponential Strong Converse for Source Coding Problem with Encoded Side Information
Dong	Tang	Harbin Institute of Technology, Shenzhen	Bin Chen	STCL: Swin-Transformer Based Compressive Learning for Cross-Modal Image Captioning
Zimeng	Wang	City University of Hong Kong	Chung Chan	Information-theoretic Graph Representation Learning with Adjacency Reconstruction
Han	Xu	Southeast University	Yinfei Xu	Timely Gossip with Age-Dependent Networks
Shengshi	Yao	Beijing University of Posts and Telecommunications	Kai Niu	Learned Speech Compression and Transmission for Semantic Communications
Qinshan	Zhang	Tsinghua University	Shu-Tao Xia	Adaptive ProductAE: SNR-Aware Adaptive Decoding of Neural Product Codes