FIM-IMS Joint Workshop on Mathematics of Data Science

Workshop on High-Dimensional Data: Statistics, Computation and Mathematics

(16 Nov 2026–20 Nov 2026)





Venue

IMS Executive Seminar Room

Bock S17, Level 3

10 Lower Kent Ridge Rd Singapore 119076

ORGANIZING COMMITTEE

Co-chairs

Peter Bühlmann
ETH Zürich

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Members

Yuansi Chen
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For more information: https://ims.nus.edu.sg/events/jointfimim_mathds/

Workshop on High-Dimensional Data: Statistics, Computation and Mathematics

(16 Nov 2026–20 Nov 2026)

Monday, 16 November 2026		
Time	**Title**	**Speaker**
0840–0850	Registration	
0850–0900	Opening and Welcome	
0900–0930	Ultra High Resolution Statistical Data Assimilation for Generating High Quality Reanalysis Scientific Datasets	Songxi Chen *Tsinghua University, China*
0935–1005	Algorithm-aware Statistical Inference on Gradient Flows	Alexander Giessing *NUS, Singapore*
1005–1030	*Tea Break*	
1030–1045	Predictive Variational Inference for Flexible Regression Models	Lucas Kock *NUS, Singapore*
1045–1100	High-Dimensional Block Signal Detection for Neutrino Telescopes	Han Su *Tsinghua University, China*
1105–1135	Rare Events, Massive Data, One Score	Johannes Lederer *University of Hamburg, Germany*
1135–1330	*Lunch Break*	
1330–1400	A Novel Statistical Approach to Analyze Image Classification	Juntong Chen *Xiamen University, China*
1400–1430	Algorithms for Adaptive and Heteroskedastic Linear Regression	Spencer Compton *Stanford University, USA*
	Bayesian Fusion Learning for Subgroup Analysis	Weitao Hu *NUS, Singapore*
	Nonregular Inference for the Mean Outcome under Optimal Treatment Regimes via Repeated Sample Splitting	Chen Ling *Zhejiang University, China*
	TabCUQ: Context-Uncertainty Quantification for Tabular Foundation Models	Yuebei Shi *Zhejiang University, China*
	Group-averaged Markov Chains	Youjia Wang *NUS, Singapore*
	Proximal Path-Specific Inference	Yang Bai *NUS, Singapore*
1430–1500	*Tea Break &* ***Poster Session***	

Monday, 16 November 2026		
Time	**Title**	**Speaker**
1500–1530	Is the regression *F*-test doubly robust?	Richard J. Samworth *University of Cambridge, UK*

Tuesday, 17 November 2026		
Time	**Title**	**Speaker**
0845–0900	Registration	
0900–0930	Structure Learning and Property Testing in Graphical Models	Gábor Lugosi *ICREA and Pompeu Fabra University, Spain*
0935–1005	CART Random Forests as Sequential Allocation over Random Opportunity Sets	Yingying Fan *Uni. of Southern California, USA*
1005–1030	*Tea Break*	
1030–1045	Training Neural Networks to be Locally Adaptive	Bilol Banerjee *NUS, Singapore*
1045–1100	Inference in High-dimensional Linear Mediation Models	Samriddha Lahiry *NUS, Singapore*
1105–1135	Learning Nonlinear Operators between Hilbert Spaces	Sven Wang *EPFL, Switzerland*
1135–1330	*Lunch Break*	
1330–1400	Statistical Learning Theory for Foundation Model Post-Training: In-Context Estimation and Reasoning	Taiji Suzuki *University of Tokyo, Japan*
1405–1430	Efficient Graph-Based Symbolic Calculation of Multivariate Cumulants with Human-Guided AI	Bingye Yang *Peking University, China*
	Versatile Differentially Private Learning for General Loss Functions	Qilong Lu *Peking University, China*
	Minimax Optimal Online Non-Stationary Reinforcement Learning	Zelin Xiao *Peking University, China*
	Bandit Simulation for Average Reward Inference	Chih-Yu Chang *Imperial College London, UK*
	Adaptive Mean Estimation by In-Context Learning: A Gradient-Flow Analysis	Martin Eppert *NUS, Singapore*
1430–1500	*Tea Break &* ***Poster Session***	
Venue: LT33 (Block S17 Level 2)		
1500–1630	***Panel Discussion*** Statistics in the Age of AI Panellists: Songxi Chen, Yingying Fan and Richard Samworth Moderators: Peter Bühlmann, Adrian Röllin	

Tuesday, 17 November 2026		
Time	**Title**	**Speaker**
1800	*Conference Dinner (by invitation only)* Location: Jade Palace Seafood Restaurant *Forum The Shopping Mall* *583 Orchard Rd, B1 - 13, Singapore 238884*	

Wednesday, 18 November 2026		
Time	**Title**	**Speaker**
0845–0900	Registration	
0900–0930	From Perturbation to Separation of Measure via Kernel Embedding	Victor Panaretos *EPFL, Switzerland*
0935–1005	Adaptive Experimentation: Bandit Algorithms and Statistical Inference	Kelly W. Zhang *Imperial College London, UK*
1005–1030	*Group Photo & Tea Break*	
1030–1045	Algorithm-aware Statistical Inference in High-dimensional Estimating Equations	Tongyu Li *NUS, Singapore*
1045–1100	Replica Symmetry Breaking and Algorithmic Thresholds in Empirical Risk Minimization	Kangjie Zhou *Cornell University, USA*
1105–1135	Active Hypothesis Testing under Computational Budgets	Yin Xia *Fudan University, China*

Thursday, 19 November 2026		
Time	**Title**	**Speaker**
0845–0900	Registration	
0900–0930	Statistical Principles for Reinforcement Learning in LLM Reasoning	Tong Zhang *UIUC, USA*
0935–1005	Bayes-filtered Transformers	Susan Wei *Monash University, Australia*
1005–1030	*Tea Break*	
1030–1045	TabMGP: Martingale Posterior with TabPFN	Kenyon Ng *NTU, Singapore*
1045–1100	Improving Ensemble Filters with Flow Matching	Haoyuan Chen *NUS, Singapore*
1105–1135	TabCUQ: Context-Uncertainty Quantification for Tabular Foundation Models	Zijian Guo *Zhejiang University, China*
1135–1330	*Lunch Break*	
1330–1400	Why and How Do Large Models Work?	Cong Fang *Peking University, China*

Thursday, 19 November 2026		
Time	**Title**	**Speaker**
1405–1440	Regression Copulas for Asymmetric Tails in Spatio-temporal Data	Darren Aw *Karlsruhe Institute of Technology, Germany*
	Linear Functional Testing with General Loadings in Sparse Regression: Separation Rates and Computational Barriers	Jie Xie *NUS, Singapore*
	Leveraging Network Information for Data Integration and Learning	Tao Shen *NUS, Singapore*
	Scalable Bayesian Quadrature via Operator-Adapted Features	Huanyan Zhu *NUS, Singapore*
	Gradient Descent Learns Rate-Optimal In-Context Threshold Estimators with Softmax Attention	Hong Ha Le *NUS, Singapore*
	Convex Mixed-integer Programming for Invariant Predictions in Multi-environment Data	Xiaozhu Zhang *University of Washington, USA*
	Amortizing Tempered Sampling with Corrected Self-Training	Hoang Viet Nguyen *NUS, Singapore*
1440–1505	*Tea Break &* ***Poster Session***	
1505–1535	Bayesian Conditional Transformation Models	Nadja Klein *Karlsruhe Institute of Technology, Germany*

Friday, 20 November 2026		
Time	**Title**	**Speaker**
0845–0900	Registration	
0900–0930	Training Dynamics of Neural Networks in the Large-scale Limit	Lénaïc Chizat *NUS, Singapore*
0935–1005	Learning with Many Objectives	Geelon So *ETH Zürich, Switzerland*
1005–1030	*Tea Break*	
1030–1045	Semiparametric Bernstein-von Mises from Stein's Method	Paul Rosa *University of Cambridge, UK*
1045–1100	Relative Spectral Energy and Learning Curves in Misspecified Gaussian Process Regression	Weihao Lu *NUS, Singapore*
1105–1135	When Few Target Labels Suffice: a Theory of Semi-supervised Domain Adaptation	Wooseok Ha *KAIST, S. Korea*
1135–1330	*Lunch Break*	

Friday, 20 November 2026		
Time	**Title**	**Speaker**
1330–1400	Splitting and Pooling: A Statistical Theory of Decision Trees and Beyond	Yanshuo Tan *NUS, Singapore*
1405–1435	Federated PCA under Differential Privacy: Optimal Rates and Efficient Estimation	Jingyang Li *Fudan University, China*

This schedule is accurate as of 16 Nov 2026 and is subjected to changes.