Machine Learning and Its Applications
Scientific Sessions
(17–28 October 2022)

Venue

IMS Auditorium
3 Prince George's Park
Singapore 118402

All talks will take place in-person except where indicated.

ORGANIZING COMMITTEE

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For more information: [Click here](#)

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All times are indicated in GMT+8.
For time zones conversion: **Click Here**

Monday, 17 October 2022		
Time	**Title**	**Speaker**
0910–0925	Registration	
0925–0930	Opening Remarks	
0930–1015	*ZOOM* Bio-inspired visual motion analysis	Cornelia Fermüller University of Maryland, USA
1015–1100	*ZOOM* Challenges in learning for and from interaction with people	Anca Dragan University of California, Berkeley, USA
1100–1115	*Coffee Break*	
1115–1200	Neurosymbolic AI for Sentiment Analysis	Erik Cambria Nanyang Technological University, Singapore
1200–1400	Lunch Break	
1400–1445	Distributed Learning Based Scalable Collaboration in Robotic Multi-Agent Systems	Guillaume Sartoretti National University of Singapore, Singapore
1445–1530	Is Classification All You Need for Computer Vision?	Angela Yao National University of Singapore, Singapore
1530–1600	*Coffee Break*	
1600–1645	The Bayesian learning rule for adaptive AI	Mohammad Emtiyaz Khan RIKEN, Japan

Tuesday, 18 October 2022		
Time	**Title**	**Speaker**
0920–0930	Registration	
0930–1015	*ZOOM* Adaptive Machine Unlearning	Seth Neel Harvard Business School, USA
1015–1115	*Coffee Break*	
1115–1200	Integrating machine learning into operational weather forecasts at the ECMWF	Jesper Dramsch ECMWF, Germany

Tuesday, 18 October 2022

Time	Title	Speaker
1200–1400	Lunch Break	
1400–1445	Transfer learning under high-dimensional generalized linear models	Yang Feng New York University, USA
1445–1530	Trusted Multi-view Classification	Joey Zhou Tianyi A*STAR, Singapore
1530–1600	*Coffee Break*	
1600–1645	Applied machine learning for climate and weather modelling	Jeffrey Adie NVIDIA, Singapore

Wednesday, 19 October 2022

Time	Title	Speaker
0920–0930	Registration	
0930–1015	*ZOOM* Lost in translation: reimagining the machine learning life cycle in education	Lydia Liu University of California, Berkeley, USA
1015–1100	Benchmarks and methods for real-world distribution shifts	Pang Wei Koh Stanford University, USA
1100–1115	*Coffee Break*	
1115–1200	Feature Learning Infinite-Width Neural Networks Outperform Finite Ones	Greg Yang Microsoft Research, USA
1200–1330	**Lunch at IMS**	
1330–1415	Approximation Theory of Deep Learning from the Dynamical Systems Viewpoint	Qianxiao Li National University of Singapore, Singapore
1415–1500	*ZOOM* Reliable AI: Vision or Illusion?	Gitta Kutyniok Ludwig-Maximilians-Universität München, Germany
1500–1530	*Group Photo & Coffee Break*	
1530–1615	Machine Learning for Human-Robot Interaction	Harold Soh National University of Singapore, Singapore
1615–1700	Black-Box Optimization with Local Generative Surrogates	Andrey Ustyuzhanin National University of Singapore, Singapore

Thursday, 20 October 2022

Time	Title	Speaker
0920–0930	Registration	

Thursday, 20 October 2022

Time	Title	Speaker
0930–1015	*ZOOM* Machine learning for scientific discovery, with examples in fluid mechanics	Steven Brunton University of Washington, USA
1015–1100	Bringing innovation to the market. Regulatory approaches to AI and the case of Europe	Andrea Bertolini Sant'Anna School of Advanced Studies – Pisa, Italy
1100–1115	*Coffee Break*	
1115–1200	Scalable automated machine learning with DeepHyper	Prasanna Balaprakash Argonne National Laboratory, USA
1200–1400	Lunch Break	
1400–1445	A Deep Learning Approach to Kohn-Sham Density Functional Theory	Min Lin SEA, Singapore
1445–1530	Self-supervised Deep Learning for Inverse Problems in Imaging	Hui Ji National University of Singapore, Singapore
1530–1600	*Coffee Break*	
1600–1645	Interpretable multimodal deep learning with application to biomedical data fusion	Yu-Ping Wang Tulane University, USA

Tuesday, 25 October 2022

Time	Title	Speaker
0920–0930	Registration	
0930–1015	*ZOOM* Understanding infinite width neural networks	Jascha Sohl-Dickstein Google, USA
1015–1100	Fast and accurate 2D material property learning by graph neural networks using sparse defect representation	Nikita Kazeev National University of Singapore, Singapore
1100–1115	*Coffee Break*	
1115–1200	Transport in Reservoir Computing	Juan-Pablo Ortega Nanyang Technological University, Singapore
1200–1400	Lunch Break	
1400–1445	What do neural networks learn? On the interplay between data structure and representation learning	Sebastian Goldt SISSA, Italy

Tuesday, 25 October 2022

Time	Title	Speaker
1445–1530	Bayesian Fixed-domain Asymptotics for Covariance Parameters in Gaussian Process Regression	Li Cheng National University of Singapore, Singapore
1530–1545	*Coffee Break & Poster Session*	
1545–1630	*ZOOM* Explainable AI via Semantic Information Pursuit	Rene Vidal Johns Hopkins University, USA

Wednesday, 26 October 2022

Time	Title	Speaker
0920–0930	Registration	
0930–1015	*ZOOM* Neural networks, wide and deep, singular kernels and Bayes optimality	Mikhail Belkin University of California, San Diego, USA
1015–1100	*ZOOM* The Curse of Overparametrization in (adversarial) Robustness	Hamed Hassani University of Pennsylvania, USA
1100–1115	*Coffee Break*	
1115–1200	Landscape modification meets spin systems: from torpid to rapid mixing and tunneling in the low-temperature regime	Michael Choi National University of Singapore, Singapore
1200–1400	Lunch Break	
1400–1445	*ZOOM* Implicit bias in machine learning	Ohad Shamir Weizmann Institute of Science, Israel
1445–1530	Finite expression method for solving high-dimensional PDEs	Haizhao Yang University of Maryland, USA
1530–1600	*Coffee Break & Poster Session*	

Thursday, 27 October 2022

Time	Title	Speaker
0925–0930	Registration	
0930–1015	*ZOOM* Towards a mathematical theory of machine learning	Weinan E Peking University, China
1015–1100	Control and machine learning	Enrique Zuazua Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
1100–1115	*Coffee Break*	

Thursday, 27 October 2022		
Time	**Title**	**Speaker**
1115–1200	Analytic natural gradient updates for Cholesky factor in Gaussian variational approximation	Linda Tan National University of Singapore, Singapore
1200–1400	Lunch Break	
1400–1445	Exactly Solving Bayesian Interpolation with Deep Linear Networks	Boris Hanin Princeton University, USA
1445–1530	*ZOOM* Data Augmentation as Feature Manipulation	Suriya Gunasekar Microsoft Research, USA
1530–1600	*Coffee Break & Poster Session*	

Friday, 28 October 2022		
Time	**Title**	**Speaker**
0925–0930	Registration	
0930–1015	Understanding and overcoming the statistical limitations of decision trees	Yan Shuo Tan National University of Singapore, Singapore
1015–1100	Minimax Optimal Fixed-Budget Best Arm Identification in Linear Bandits	Vincent Tan National University of Singapore, Singapore
1100–1115	*Coffee Break*	
1115–1200	Adan: Adaptive Nesterov Momentum Algorithm for Faster Optimizing Deep Models	Pan Zhou SEA, Singapore
1200–1400	Lunch Break	
1400–1445	*ZOOM* Information theory through kernel methods	Francis Bach INRIA/ENS, France
1445–1530	*ZOOM* The Efficacy of Pessimism in Asynchronous Q-Learning	Jianqing Fan Princeton University, USA

This schedule is accurate as of 25 Oct 2022.