Workshop on Mathematics and Artificial Intelligence
(02 Feb 2026–06 Feb 2026)

Organizing Committee

Bao Chenglong
Tsinghua University

Dong Bin
Peking University

Ji Hui
National University of Singapore

Jiao Yulin
Wuhan University

Li Qianxiao
National University of Singapore

Yang Zhijian
Wuhan University

Venue

IMS Executive Seminar Room
Bock S17, Level 3
10 Lower Kent Ridge Rd Singapore 119076

For more information: https://ims.nus.edu.sg/events/mathandai

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Monday, 2 February 2026		
Time	**Title**	**Speaker**
0840–0850	Registration	
0850–0900	Opening remarks	
0900–0940	Wuhan University, China A Complete Error Analysis for Deep Ritz Method	Zhijian Yang *Wuhan University, China*
0940–1020	Learning, Approximation and Control	Qianxiao Li *National University of Singapore, Singapore*
1020–1040	Tea Break	
1040–1120	Efficient Deep Learning Methods for Very High Dimensional Quasilinear Parabolic PDEs and HJB Equations	Tao Zhou *Chinese Academy of Sciences, China*
1120–1200	Hybrid Neural Modelling: Theory and Applications	Thomas Gaskin *The London School of Economics and Political Science, UK*
1200–1400	Lunch Break	
1400–1440	Generative AI: Mathematical Foundations and Applications	Jian Sun *Xi'an Jiaotong University, China*
1400–1520	Diffusion Models for Inverse Problems: From Pretrained Priors to Posterior Sampling	Tongyao Pang *Tsinghua University, China*
1520–1540	Tea Break	
1540–1620	A Gradient-Oriented Diffusion Sampling Method for Deep Partial Differential Equation Solvers	Haijun Yu *Chinese Academy of Sciences, China*
1620–1700	Unsupervised Operator Learning Approach for Dissipative equations via Onsager principle	Xiaofei Zhao *Wuhan University, China*

Tuesday, 3 February 2026		
Time	**Title**	**Speaker**
0845–0900	Registration	
0900–0940	SPIKE: Stable Physics-Informed Kernel Evolution Method for Solving Hyperbolic Conservation Laws	Lei Zhang *Peking University, China*

Tuesday, 3 February 2026		
Time	**Title**	**Speaker**
0940–1020	Structure-Preserving Construction of Collision Operators for Kinetic Equations from Molecular Dynamics	Huan Lei *Michigan State University, USA*
1020–1040	Tea Break	
1040–1120	Approximation error for Holder class with Transformers	Xiliang Lu *Wuhan University, China*
1120–1200	Learn to Synthesize Data in Imaging	Chenglong Bao *Tsinghua University, China*
1200–1400	Lunch Break	
1400–1440	Learning-Based Algorithms for Solving Combinatorial Optimization	Zaiwen Wen *Peking University, China*
1400–1520	A Geometric Perspective on Polynomially Solvable Convex Maximization	Shaoning Han *National University of Singapore, Singapore*
1520–1540	Tea Break	
1540–1620	Average orders of Automorphism groups and Average-case complexity of Tensor Isomorphism problems	Yinan Li *Wuhan University, China*
1620–1700	Variational Learning of Open Quantum Dynamics from Sparse and Noisy Data	Pinchen Xie *Lawrence Berkeley National Labs, USA*

Wednesday, 4 February 2026		
Time	**Title**	**Speaker**
0845–0900	Registration	
0900–0940	Adam-family Methods with Decoupled Weight Decay in Deep Learning	Kim Chuan Toh *National University of Singapore, Singapore*
0940–1020	AI for Mathematics: From Digitization to Intelligentization	Bin Dong *Peking University, China*
1020–1040	Group Photo & Tea Break	
1040–1120	Diffusion models for High Dimensional Distributions	Xin Tong *National University of Singapore, Singapore*
1120–1200	A New Variational model for Simulating Solid-state Dewetting problems	Wei Jiang *Wuhan University, China*
1200–1400	Lunch Break	
1400–1500	Free Discussion	

Wednesday, 4 February 2026		
Time	**Title**	**Speaker**
1500–1600	*Colloquium Lecture* Applied Mathematics Inspired by Irrational Numbers	Pingwen Zhang *Wuhan University, China*
1600–1800	Free Discussion	
1800–2000	*Conference Dinner (by invitation only)* The Scholar Chinese Restaurant 9 Kent Ridge Dr, Singapore 119241	

Thursday, 5 February 2026		
Time	**Title**	**Speaker**
0845–0900	Registration	
0900–0940	Optimal PhiBE — A Model-Free PDE-Based Framework for Continuous-Time Reinforcement Learning	Yuhua Zhu *University of California, Los Angeles, USA*
0940–1020	Towards Large Scientific Learning Models with In-Context Operator Networks (ICON)	Liu Yang *National University of Singapore, Singapore*
1020–1040	Tea Break	
1040–1120	Quantitative estimates on Convergence rates of Kinetic dynamics for Sampling	Lihan Wang *National University of Singapore, Singapore*
1120–1200	Schrödinger-Föllmer Diffusion: Sampling, Optimization, Generative Learning	Lican Kang *Wuhan University, China*
1200–1400	Lunch Break	
1400–1440	Blind Separation of Non-Stationary Multi-Component Signals: Enhanced SST/Chirplet Methods and Their Applications	Qingtang Jiang *Zhejiang Normal University, China*
1400–1520	Advances in Fast Nonconvex Algorithms for Low-Rank Hankel Matrix Recovery	Juntao You *Wuhan University, China*
1520–1540	Tea Break	
1540–1620	Understanding Weight Space Symmetries in Contemporary Deep Learning Architectures	Tan Minh Nguyen *National University of Singapore, Singapore*
1620–1700	Origin of Quasiperiodic Interfaces	Kai Jiang *Xiangtan University, China*

Friday, 6 February 2026		
Time	**Title**	**Speaker**
0845–0900	Registration	

Friday, 6 February 2026		
Time	**Title**	**Speaker**
0900–0940	Provable Diffusion Posterior Sampling for Bayesian Inversion	Yuling Jiao *Wuhan University, China*
0940–1020	Learning Sparse Representations with Symmetries	Yong Sheng Soh *National University of Singapore, Singapore*
1020–1040	Tea Break	
1040–1120	On the Stabilization of PINNs	Cheng Yuan *Wuhan University, China*
1120–1200	Advances in Self-Supervised Image Denoising: From Gaussian Noise to Real-World Noise	Hui Ji *National University of Singapore, Singapore*

This schedule is accurate as of 30 Jan 2026.