

Mathematical Foundations & Methodologies for Artificial Intelligence and Data-Driven Scientific Computing

Workshop on Mathematical Approaches to Modern AI Challenges

(31 Aug 2026–4 Sep 2026)



ORGANIZING COMMITTEE

Tan Minh Nguyen

National University of Singapore

Yang Liu

National University of Singapore

Richard Baraniuk

Rice University

Dong Bin

Peking University

Vincent Tan

National University of Singapore

Ji Hui

National University of Singapore

Li Qianxiao

National University of Singapore

Ren Weiqing

National University of Singapore

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/mathfoundationsai>

Workshop on Mathematical Approaches to Modern AI Challenges

(31 Aug 2026–4 Sep 2026)

Monday, 31 August 2026

Time	Title	Speaker
0830–0855	Registration	
0855–0900	Opening Remarks	Program Organizers
0900–0955		Richard Baraniuk <i>Rice University, USA</i>
0955–1015	Tea Break	
1015–1110	Learning Rates, Restart and Adaptive Acceleration	Alexandre d'Aspermont <i>Ecole Normale Supérieure, France</i>
1110–1115	Short Break	
1115–1210		
1210–1400	Lunch Break	
1400–1455		Robin Walters <i>Northeastern University, USA</i>
1455–1515	Tea Break	
1515–1610	Nipping the Butterfly Effect in the Bud: Self-Output Fine-Tuning for Autoregressive Weather Prediction	Hsuan-Tien Lin <i>National Taiwan University, Taipei</i>
1610–1615	Short Break	
1615–1710		

Tuesday, 1 September 2026

Time	Title	Speaker
0845–0900	Registration	
0900–0955	Sobolev IPM with Graph Metric: Regularization, Scalability, and Applications	Tam Le <i>The Institute of Statistical Mathematics, Japan</i>
0955–1015	Group Photo & Tea Break	
1015–1110		Kannan Ramchandran <i>UC Berkeley, USA</i>
1110–1115	Short Break	
1115–1210		

Tuesday, 1 September 2026		
Time	Title	Speaker
1210–1400	Lunch Break & Poster Session	
1400–1455	Optimized Relevance Networks for AI	Alfred Hero <i>University of Michigan, USA</i>
1455–1515	Tea Break	
1515–1610	Tutorial (Part 1)	Tan Minh Nguyen <i>NUS, Singapore</i>
1610–1615	Short Break	
1615–1710	Tutorial (Part 2)	Tan Minh Nguyen <i>NUS, Singapore</i>
1740	<i>Workshop Dinner (by invitation only)</i> 1-way transfer from NUS to dinner venue is provided.	
Wednesday, 2 September 2026		
Time	Title	Speaker
0845–0900	Registration	
0900–0955		Tien Trinh Nguyen Shanghai Jiao Tong University, China
0955–1015	Tea Break	
1015–1110		Tara Javidi <i>UC San Diego, USA</i>
1110–1115	Short Break	
1115–1210		
1210–1400	Lunch Break	
1400–1455		Mauro Maggioni <i>Johns Hopkins University, USA</i>
1455–1515	Tea Break	
1515–1610		
1610–1615	Short Break	
1615–1710	Numerical Approximation for McKean-Vlasov SDE with Super-linear Growth Coefficients	Hoang Long Ngo Hanoi National University of Education, Vietnam

Thursday, 3 September 2026		
Time	Title	Speaker
0845–0900	Registration	
0900–0955		
0955–1015	Tea Break	
1015–1110	Rigorous Model-Constrained Scientific Machine Learning for Digital Twins: A Computational Mathematics Perspective	Tan Bui-Thanh <i>UT Austin, USA</i>
1110–1115	Short Break	
1115–1210		
1210–1400	Lunch Break	
1400–1455		Won Chang <i>Seoul National University, S. Korea</i>
1455–1515	Tea Break	
1515–1610	On Preventing Model Collapse in Generative Models	Bahman Ghahsifard <i>Queen's University, Canada</i>
1610–1615	Short Break	
1615–1710		Thanh Bình Nguyễn <i>University of Science - VNUHCM, Vietnam</i>
Friday, 4 September 2026		
Time	Title	Speaker
0845–0900	Registration	
0900–0955		Melanie Weber <i>Harvard University, USA</i>
0955–1015	Tea break	
1015–1110		
1110–1115	Short Break	
1115–1210		

This schedule is accurate as of 30 Jul 2026 and is subjected to changes.