

## ICFEM 2025 Program (Hangzhou, GMT+8)

Day 0 - November 10, 2025

8:30 - 17:30

Registration

9:00 - 12:00

Tutorial: Analysis (Model Checking) Techniques for Markov Decision Processes (MDPs)

Speaker: Prof. P. S. Thiagarajan

Day 1 - November 11, 2025

8:30 - 9:00

Registration & Opening Remark

9:00 - 10:00

Opening Keynote 1 by Prof. Jifeng He

10:00 - 10:30

Coffee Break

### Session 1: Formal Verification of Security and Cryptographic Protocols

[3] Formal Verification of Physical Layer Security Protocols for Next-Generation Communication Networks

Kangfeng Ye, Roberto Metere, Jim Woodcock and Poonam Yadav

[28] Formal Construction of Threat Detections from Attack Trees

Dumitru Bogdan Prelipcean, Catalin Dima and Daniele Varacca

[37] ZK-ProVer: Proving Programming Verification in Non-Interactive Zero-Knowledge Proofs

Haoyu Wei, Jingyu Ke, Ruibang Liu and Guoqiang Li

[45] Formal Modeling and Verification of Blockchain Consensus Protocols: A Case Study on ChainMaker

Minfan Xu, Shuo Zhou, Xian Xu and Huan Long

12:30 - 14:00

Lunch Break

14:00 - 15:00

Keynote 2 by Prof. Jim Woodcock

15:00 - 15:30

Coffee Break

### Session 2: LLMs and Formal Methods

[4] Automata-Based Steering Method for Diverse Structured Generation of Large Language Models

Xiaokun Luan, Zeming Wei, Yihao Zhang and Meng Sun

[8] LLM-SYM: Integrating Symbolic Methods and Large Language Models for Automated Theorem Proving

Yifan Wu, Yanhong Huang and Jianqi Shi

[11] Formalizing Requirements into Dafny Specifications with LLMs

Yi-Han Lu, Xue-Yang Zhu, Wenhui Zhang and Rongjie Yan

[36] A Test-Driven Approach for Refining Use Case Descriptions of Software Requirements with LLMs

Haibo Li, Lixiao Zheng and Qihang Cai

15:30 - 17:30

		Day 2 - November 12, 2025
9:00 - 10:00		<b>Keynote 3 by Mariëlle Stoelinga</b>
10:00 - 10:30		Coffee Break
10:30 - 12:00		<b>Session 3: Runtime Verification, Control, and Robotics</b> <b>[10] Neural-Symbolic System Control Adjustment Based on Runtime Verification</b> Honq Xu Zhu, Wanwei Liu and Ji Wang <b>[9] Modeling and Analysis of Cyber-Physical Systems in the Hybrid pi-Calculus Using Extended Sequence Diagrams</b> Xiong Xu, Jixiang Miao, Shuling Wang and Jean-Pierre Talpin <b>[65] Formal Modelling of Fault Tolerant Robotic Missions</b> Manon Lecart and Elena Troubitsyna
12:00 - 13:30		Lunch Break
13:30 - 15:30		<b>Session 4: Program Analysis and Software Reliability</b> <b>[18] Detecting Vector Container Errors in C++ Programs via Abstract Interpretation</b> Liu Siyu, Chen Liqian, Fan Guangsheng, Yin Banghu, Huang Chun and Wang Ji <b>[41] Synthesizing Loops from Linear Ranking Functions</b> Rui-Juan Jing, Yaru Yuan, Yuxing Cai, Yi Li and Changbo Chen <b>[25] MetaLogic: Robustness Evaluation of Text-to-Image Models Using Logically Equivalent Prompts</b> Yifan Shen, Yangyang Shu, Hye-young Paik and Yulei Sui <b>[48] Model-based test case generation from UML sequence diagrams using extended finite state machines</b> Mauricio Rocha, Adenilso Simao and Thiago Souza
15:30 - 16:00		Coffee Break
16:00 - 17:50		<b>Session 5: SMT and Quantitative Verification</b> <b>[60] Avoiding Larger Conflict Regions in CDCL-Style Methods for Solving SMT-NRA</b> Xinpeng Ni, Tianyi Ding and Bican Xia <b>[61] Formal Modeling of Reinforcement Learning Systems with SMT</b> Tianyi Ding, Yuxin Lin and Meng Sun <b>[64] Towards High-Level SMT Program Modeling: Bounded Integers, Simplified Structs, and Metaprogramming</b> Xiangyu Li <b>[56] Quantitative Verification for Temporal Properties of Massive Linear Systems</b> Qing Liu, Yuntao Li, Sung Woo Choi, Luan Viet Nguyen and Hoang-Dung Tran
18:30 - 20:30		<b>Conference Banquet &amp; Award Ceremony(Location: Jinxi Hotel)</b>

		Day 3 - November 13, 2025
9:00 - 10:00		<b>Keynote 4 by Yongwang Zhao</b>
10:00 - 10:30		Coffee Break
10:30 - 12:30		<b>Session 6: Logic, Automata, and Concurrent Systems</b> <b>[22] BCCIC3: Batch Clause Construction Enhanced Generalization in IC3</b> Yi Chen, Liangze Yin, Xinyi Gong, Ji Wang and Ting Wang <b>[42] Modeling and Verifying Concurrent Reactive Systems Using Separation Logic</b> Huan Sun, David Sanán, Jun Sun and Wenhui Wang <b>[54] A Unified Method to Efficiently Verify Opacity of Discrete-Timed Automata</b> Julian Klein, Kuize Zhang and Sabine Glesner <b>[67] Specification and Verification of Multi-Clock Systems Using a Temporal Logic with Clock Constraints</b> Yuanrui Zhang, Frederic Mallet, Min Zhang and Zhiming Liu
12:30 - 14:00		Lunch Break
14:00 - 15:30		<b>West Lake Hiking Tour</b> <i>End</i>

