

## ICFEM 2023 Program (QLD GMT+10)

### Day 1: 22 November, 2023 (Wednesday)

08:30 - 09:00

Registration

09:00 - 09:30

Opening Remarks

09:30 - 10:30

**Keynote 1: Compositional Reasoning at the Software/Hardware Interface, Graeme Smith**

10:30 - 11:00

Break

#### Concurrency and Analysis

11:00 - 12:15

Practical Verified Concurrent Program Security  
Toby Murray

Trace Models of Concurrent Valuation Algebras  
Naso Evangelou-Oost, Larissa Meinicke, Callum Bannister and Ian J. Hayes

Early and Systematic Validation of Formal Models  
Sebastian Stock

12:15 - 13:30

Break

#### Automata and Analysis

13:30 - 15:00

Active Inference of EFSMs Without Reset  
Michael Foster, Roland Groz, Catherine Oriat, Adenilso Simao, Germán Vega and Neil Walkinshaw

Learning Mealy Machines with Local Timers  
Paul Kogel, Verena Klös and Sabine Glesner

Dynamic Extrapolation in Extended Timed Automata  
Nicolaj Ø. Jensen, Peter G. Jensen and Kim G. Larsen

15:00 - 15:30

Break

#### Neural Networks Verification

15:30 - 17:15

Formalizing Robustness against Character-level Perturbations for Neural Network Language Models  
Zhongkui Ma, Xinguo Feng, Zihan Wang, Shuofeng Liu, Mengyao Ma, Hao Guan and Mark Huasong Meng

Branch and Bound for Sigmoid-like Neural Network Verification  
Xiaoyong Xue and Meng Sun

Unified Verification of Neural Networks' Robustness and Privacy in Computer Vision  
Feng Xu

Verifying Neural Networks by Approximating Convex Hulls  
Zhongkui Ma

Eager to Stop: Efficient Falsification of Deep Neural Networks  
Guanqin Zhang

17:15

Reception

**Day 2: 23 November, 2023 (Thursday)**

**09:00 - 10:00**

**Keynote 2: A Foundation for Interaction, Yuxi Fu**

**10:00 - 10:30**

Break

**Software Verification**

**10:30 - 12:15**

Verifying Compiler Optimisations  
Ian Hayes, Mark Utting and Brae Webb

An Idealist's Approach for Smart Contract Correctness  
Tai D. Nguyen, Long H. Pham, Sun Jun and Quang Loc Le

Incremental Property Directed Reachability  
Max Blankestijn and Alfons Laarman

Vulnerability Detection via Typestate-Guided Code Representation Learning  
Xiao Cheng

**12:15 - 13:30**

Break

**Security and Privacy**

**13:30 - 15:00**

On Analysing Weak Memory Concurrency  
Subodh Sharma

Compositional Vulnerability Detection with Insecurity Separation Logic  
Toby Murray, Pengbo Yan and Gidon Ernst

Guided Integration of Formal Verification in Assurance Cases  
Irfan Slijivo, Ewen Denney and Jonathan Menzies

**15:00 - 15:30**

Break

**Emerging Systems**

**15:30 - 17:15**

Certifying Sequential Consistency of Machine Learning Accelerators  
Huan Wu, Fei Xie and Zhenkun Yang

A Runtime Verification Framework For Cyber-physical Systems Based On Data Analytics And LTL Formula Learning  
Ayodeji Akande, Zhe Hou, Ernest Foo and Qinyi Li

IoT Software Vulnerability Detection Techniques through Large Language Model  
Yilin Yang

Formal Verification of the Burn-to-Claim Blockchain Interoperable Protocol  
Babu Pillai, Zhe Hou, Kamanashis Biswas and Vallipuram Muthukumarasamy

Formal Foundations for Intel SGX Data Center Attestation Primitives  
Muhammad Usama Sardar, Rasha Faqeh, Christof Fetzer

**19:00**

Banquet

**Day 3: 24 November, 2023 (Friday)**

**09:00 - 10:00**

**Keynote 3: Separation of Concerns for Complexity Mitigation in System and Domain Formal Modelling – A Dive into Algebraic Event-B Theories, Yamine Ait Ameur**

**10:00 - 10:30**

Break

**Proofs and Validation**

**10:30 - 12:00**

Certified Proof and Non-Provability  
Dirk Pattinson

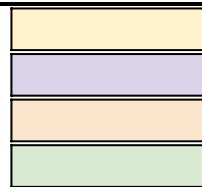
Proving Local Invariants in ASTDs  
Quelen Cartellier, Marc Frappier and Amel Mammar

Validation-Driven Development  
Sebastian Stock, Atif Mashkooor and Alexander Egyed

**12:00**

End

**Legends:**



Keynotes

Invited Papers

Regular Papers

Doctoral Symposium Papers