

# MVD 2016 Program: Friday, Oct. 21, 2016

## Oak Room ISU Memorial Union

**8:00am – 8:30am WELCOME AND BREAKFAST**

**8:30am – 9:30am Keynote Speaker:** Aaron Tomb

*Top-to-bottom Verification of Cryptographic Algorithms*

**9:30am – 10:30am Session 1**

*Abstraction Based Reachability Analysis for Finite Branching Stochastic Hybrid Systems*

Zhang Wenji, Prabhakar Pavithra, Natarajan Balasubramaniam

*Simulation-Based Verification of Hybrid Systems involving Novel Dynamic Refinement*

Hao Ren, Ratnesh Kumar

*Bounded safety analysis of parameterized linear hybrid systems*

Ratan Lal

**10:30am – 10:50am COFFEE BREAK**

**10:50am – 12:10pm Session 2**

*An abstract concurrent memory model specification for block structured data*

David Bergvelt, Elsa Gunter, Liyi Li

*VeriF-OPT: A Verification Framework for Optimizations and Program Transformations*

Elsa Gunter, William Mansky, Liyi Li, Susannah Mansky, David Bergvelt

*Variable Reordering in Binary Decision Diagrams*

Chuan Jiang, Junaid Babar, Gianfranco Ciardo, Andrew S. Miner, Benjamin Smith

*Program Verification by Coinduction*

Brandon Moore, Lucas Peña, Grigore Roşu

**12:10pm – 1:20pm LUNCH**

**1:20pm – 2:20pm Session 3**

*An Implementation of Logic Programming Based on the Edinburgh Logical Framework*

Mary Southern, Gopalan Nadathur

*Relational Reasoning in SMT*

Baolu Meng, Andrew Reynolds, Cesare Tinelli

*Reasoning About Specifications in Linear Logic*

Dan DaCosta, Gopalan Nadathur

**2:20pm – 3:40pm Session 4**

*Constraint Refined Taint Analysis for Software Vulnerability Detection*

Ruoyu Zhang, Cesare Tinelli

*Mechanizing the Computationally Complete Symbolic Attacker in Coq*

Gergei Bana, Rohit Chadha, Ajay Kumar Eeralla

*Towards Synthesis from Assume-Guarantee Contracts involving Infinite Theories: A Preliminary Report*

Andreas Katis, Andrew Gacek, Michael W. Whalen

*Remote Attestation Protocol Synthesis and Verification*

Paul Kline

**3:40pm – 4:00pm COFFEE BREAK**

**4:00pm – 4:40pm Session 5**

*From Design Contracts to Component Requirements Verification*

Jing (Janet) Liu, John D. Backes, Darren Cofer, Andrew Gacek

*Contract-Based Verification of Complex Time-Dependent Behaviors in Avionic Systems*

Devesh Bhatt, Arunabh Chattopadhyay, Wenchao Li, David Oglesby, Sam Owre, Natarajan Shankar

**4:40pm – 6:00pm Session 6**

*Collective Program Analysis*

Ganesh Upadhyaya, Hridesh Rajan

*Online Verification-Validation*

Jared Wright

*Formal K to Isabelle Translation Framework based on K Semantics*

Liyi Li, Elsa Gunter

*Dependently typed programming with lambda encodings in Cedille*

Ananda Guneratne, Chad Reynolds, Aaron Stump

# MVD 2016 Program: Saturday, Oct. 22, 2016

## 2245 Coover Hall

**8:00am – 8:30am BREAKFAST**

**8:30am – 9:30am Keynote Speaker:** Sagar Chaki

*Engineering High-Assurance Software for Distributed Adaptive Real-Time Systems*

**9:30am – 10:50am Session 7**

*Resequencing Decision Diagram Operations*

Junaid Babar, Andrew S. Miner

*A Semantics for Attestation Protocols using Session Types in Coq*

Adam Petz

*Extensions of SMTCoq to Bit-Vectors and Arrays*

Burak Ekici, Chantal Keller, Alain Mebsout, Cesare Tinelli

*A Mechanized Formalization of a Concurrent Core Calculus with Modular Reasoning*

Swarn Priya, Mehdi Bagherzadeh, Hriday Rajan

**10:50am – 11:00am COFFEE BREAK**

**11:00am – 12:20pm Session 8**

*Verification and Test Generation for Plan Executions in Autonomy Applications*

Jason Biatek, Sanjai Rayadurgam

*Practical Verification? Insights from a Formal Verification Study of the Linux Kernel*

Suresh C. Kothari, Payas Awadhutkar, Ahmed Tamrawi

*Formal Methods for Certification: Why and How?*

Lucas Wagner

*Verification of a Molecular Watchdog Timer*

Samuel J. Ellis

**12:20pm – 1:30pm LUNCH**