Carnegie Mellon University
Software Engineering Institute

RESEARCH REVIEW 2019

Agenda

Day 1, October 21

Start	Activity	Presenter(s)
8:00 a.m.	Breakfast	
8:30 a.m.	Remarks by CMU SEI CEO	Dr. Paul Nielsen
8:40 a.m.	Welcome by CMU Vice-President of Research	CMU VP for Research Dr. Michael McQuade
8:55 a.m.	CMU SEI CTO: Future Reach in Software Engineering and Cybersecurity for the DoD	Dr. Thomas Longstaff
Session 1	Impacting Today's State of the Practice in Software Engineering and Cybersecurity	
9:25 a.m.	Session Opening	John Robert
9:30 a.m.	Rapid Construction of Accurate Automatic Alert Handling System	Dr. Lori Flynn, Ebonie McNeil
9:50 a.m.	Morning Break	
10:20 a.m.	Integrating Safety and Security Engineering for Mission-Critical Systems	Dr. Sam Procter, Alex Boydston
10:45 a.m.	Recovering Meaningful Variable Names in Decompiled Code	Dr. Bogdan Vasilescu
11:10 a.m.	Causal Models for Software Cost Prediction & Control	Dr. Michael Konrad, Robert Stoddard, Dr. David Zubrow, Dr. William Nichols
11:40 a.m.	Session Closing	John Robert
11:45 a.m.	Touchpoint: Connections for Impacting Today's Practice	Dr. Thomas Longstaff
11:50 a.m.	Lunch	
12:45 p.m.	Future Reach Conversation: Defining AI Engineering	Dr. Matt Gaston, Professor Martial Hebert
Session 2	Shaping the Next Generation of Practice	
1:20 p.m.	Session Opening	William Wilson
1:25 p.m.	Kalki: High Assurance Software-Defined IoT Security	Sebastian Echeverria
1:50 p.m.	Rapid Certifiable Trust	Dr. Dionisio deNiz
2:15 p.m	Using All Processor Cores While Being Confident about Timing	Dr. Bjorn Andersson
2:40 p.m.	Afternoon Break	

3:10 p.m.	Untangling the Knot: Recommending Component Refactorings	James Ivers
3:35 p.m.	Automated Code Repair to Ensure Memory Safety	Dr. Will Klieber
4:00 p.m.	Session Closing	William Wilson
4:05 p.m.	Touchpoint: Connections in Shaping the Next Generation of Practice	Dr. Thomas Longstaff
4:10 p.m.	Panel: Sketching the Future of AI Mission Systems	Roberta Stempfley, Hasan Yasar, Dr. Rahmi Marasli
5:10 p.m.	Day 1 Wrap-Up and Day 2 Preview	Roberta Stempfley
5:15 p.m.	Reception	

Day 2, October 22

Start	Activity	Presenter(s)
8:00 a.m.	Breakfast	
8:30 a.m.	Welcome Back	Dr. Thomas Longstaff
8:45 a.m.	Panel: Supercharging the Software Factory: Deploying Capability at the Speed of Relevance	Anita Carleton, Dr. Michael McQuade, Dr. Forrest Shull, Andrew Kemendo
Session 3	Exploring Disruptive Technology Elements for How DoD Will Use Software	
9:45 a.m.	Session Opening	Brenda Penderville
9:50 a.m.	Spiral/AIML: Resource-Constrained Co-Optimization for High-Performance, Data-Intensive Computing	Dr. Scott McMillan, Professor Franz Franchetti
10:10 a.m.	A Series of Unlikely Events: Learning Patterns by Observing Sequential Behavior	Dr. Eric Heim
10:30 a.m.	Morning Break	
11:00 a.m.	Emotion Recognition from Voice in the Wild	Oren Wright, Assoc. Research Prof. Rita Singh
11:20 a.m	Field Stripping a Weapons System: Building a Trustworthy Computer	Dr. Gabriel Somlo
11:40 a.m.	Summarizing and Searching Video	Edwin Morris, Dr. Rachel Brower-Sinning, Dr. Jeffery Hansen, Adam Harley
12:10 p.m.	Lunch	
1:10 p.m.	Future Reach Conversation: Countering Adversarial Operations Made Possible by AI	
1:40 p.m.	Projecting Quantum Computational Advantage Versus Classical State of the Art	Dr. Jason Larkin, Daniel Justice
2:00 p.m.	Graph Convolutional Neural Networks	Oren Wright
2:20 p.m.	Session Closing	Brenda Penderville
2:25 p.m.	Touchpoint: Connections in Exploring the Disruptions that will affect How DoD Will Use Software	Dr. Thomas Longstaff
2:30 p.m.	Afternoon Break	
3:00 p.m.	Panel: Projecting How AI/ML Will Revolutionize Software Vulnerability Discovery, Mitigation, and/or Coordination	Dr. Greg Shannon, Art Manion, Dr. Nathan VanHoudnos
3:50 p.m.	Event Wrap-Up	Dr. Thomas Longstaff
3:55 p.m.	Adjourn	