

The University of Memphis
Systems Testing Excellence Program
FedEx Institute of Technology



11th International Research Workshop on Advances and Innovations in Software Testing

The workshop is organized by the Systems Testing Excellence Program - STEP (www.memphis.edu/step) at the University of Memphis. STEP is an interdisciplinary research program under the auspices of the FedEx Institute of Technology that brings together the Departments of Business Information & Technology, Computer Science, and Computer Engineering.



October 15, 2018
Memphis, Tennessee

2018 Conference Committee

General Chair:	Sajjan Shiva
Program Chair:	Robin Poston
Organizing Chair:	Jong Seok Lee
International Chair:	Dani Almog
STEP Certification Chair:	Mark Gillenson
Paper Session Chair:	Ted Lee
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FedEx Institute of Technology:	Cody Behles


Welcome to the 11th International Research Workshop on Advances and Innovations in Software Testing

On behalf of the Organizing Committee, it is our pleasure to welcome you to the 11th International Workshop on Advances and Innovations in Software Testing hosted by the Systems Testing Excellence Program (STEP), co-located with the 29th IEEE International Symposium on Software Reliability Engineering (ISSRE 2018) in Memphis, Tennessee.

The STEP workshop is a forum to discuss Advances and Innovations in Software and System Testing, by involving researchers, senior technical people, domain experts, and regulatory authorities to present new solutions and perspectives in the context of industrial and academic research projects. The workshop welcomes contributions related to any area of software testing. The members of the organizing committee have worked hard over the last few months to put together a great agenda for the workshop. I sincerely hope that you will go back with some bright ideas to enhance your software testing activity after interactions with experts in the field. I urge you to fully participate and be as engaging as possible to make the workshop worthwhile. We also welcome your comments and suggestions to make the workshop more pertinent to your work in software testing.

We would like to thank the program committee members for their support at shaping the workshop program; the organizers of the ISSRE conference for kindly hosting the STEP workshop; and the research community for their valued contributions to the workshop.

Sajjan G. Shiva, Ph.D.
Workshop General Chair



Monday, October 15, 2018

All sessions are in Methodist Presentation Theatre on the first floor of FIT.

7:00 – 17:00 Registration Open (FIT Lobby)

8:00 – 8:30 Breakfast

8:30 – 8:35 Welcome Address

Mark Gillenson

*Professor, Department of Business
Information & Technology
Associate Director of STEP
University of Memphis*

8:35 – 8:50 Opening Comments

Robin Poston

*Director of STEP
Interim Dean of The Graduate School*

Anne Sparrenberger

*FedEx Corporation, Vice President
STEP Industry Partner and Advisor*

8:50 – 9:40 Keynote Address

Evolution and Future Needs of Software Testing
Organizations for the Digital Transformation

Christof Budnik

Siemens

9:40 – 10:10 Testing Conversations
Discussion Lead: **Ram Chillarege**

10:10 – 10:30 Break

10:30 – 11:10 Testing and Security

Paper Session Chair: **Ted Lee**

“Establishment of Methods for Information Security System Policy Using Benchmarking”

***Martin Kang** of University of Memphis, **Ted Lee** of University of Memphis, and **Sungyong Um** of National University of Singapore*

“The DevSecOps and Agency Theory”

***Jong Seok Lee** of University of Memphis*

11:10 – 12:10 Panel 1:
The Past, Present, & Future of Testing Organizations

Panel Chair:
Raminder Lotay

Panelists:
Tammika Anderson, FedEx
Vikram Dias, International Paper
Robin Poston, University of Memphis

12:10 – 13:10 Lunch Break

13:10 – 13:25 Industry Talk 1

Topic: Building DevOps ready Test Frameworks
Speaker: **Nithin Rao of Syntel**

13:25 – 13:40 Idea Watch

Applications of Analytics in Systems Testing

Naveen Kumar

University of Washington

13:40 – 14:20 Test Case Prioritization and Value Estimation

Paper Session Chair: **Paul Zhang**

“Graphite: A Greedy Graph-Based Technique for Regression Test Case”

Maral Azizi of University of North Texas and
Hyunsook Do of University of North Texas

“Value Estimation of a Software Test Case”

Mark Gillenson of University of Memphis,
Xihui Zhang of University of North Alabama,
Tom Stafford of Louisiana Tech University, and
Yao Shi of University of Memphis

14:20 – 14:40 Break

14:40 – 15:10 Advances in Testing Practices

Testing Globally Distributed Data Persistence
Technology at Scale

Rogers Stephens

FedEx

15:10 – 16:10 Panel 2:
Making CI/CD Happen

Panel Chair:
Cody Behles

Panelists:
Mark Gillenson, University of Memphis
Dan Petit, Service Master
Jim Stout, FedEx

16:10 – 16:20 Closing Comments

Mark Gillenson
Associate Director of STEP
Professor of Business Information & Technology

19:00 – 21:00 ISSRE Evening Reception

The reception will be held in Holiday Inn on the University of Memphis campus.

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