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# **The 5<sup>th</sup> IEEE International Workshop on Model-Based Verification & Validation**

**in conjunction with**

**QRS 2015**

**Vancouver, Canada, August 3-5, 2015**

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Costs entailed by software failures demonstrate that the systematic development of software of a certain quality is still a challenge, even after decades of research. A reason for this can certainly be found within the individual projects. Often, known techniques of quality assurance are neither well understood nor properly used due to deadline and budget restrictions. However, another reason is the lack of techniques for quality assurance for specific types of software as well as for software developed according to specific programming and modeling techniques.

Many ad-hoc security specifications, models, and protocols, which were implemented in software components in the past, turned out to be vulnerable to some extent. Formal verification and validation methodologies have the potential to increase user confidence in software artifacts. Therefore, theoretical foundations for security assurance should be investigated to discover new methods that will bring high certainty to the trustworthiness of software entities.

Verification and validation (V&V) methods, especially testing, deliver important analytical techniques for quality assurance. In model-based V&V, the software under consideration is represented by means of a model that focuses on certain aspects, often on the behavior of the software. Finite state machines and flow graphs are frequently used models. Testing techniques based on such models include, for instance, formal verification, control and data flow analysis, test case generation, and model checking.

This workshop aims at giving researchers and practitioners a platform to present their results and experience to a broader audience.

## **Topics of interest**

Topics include, but are not limited to:

- Formal Methods and Theories in Model-Based V&V
- Simulation by Models, Forecasts of Behavior and Properties by Models
- Models and Modeling Notations for Programming and V&V
- Tools for Model-Based V&V
- Model-Based Security Evaluation
- V&V of Security Specifications, Models, and Protocols
- Theoretical Foundations of Security Analysis and Design
- Formal Models for Security Testing
- Testing with Software Usage Models
- Test Case Generation based on Formal and Semi-Formal Models
- Test Coverage Metrics and Criteria for Model-Based Testing
- Models as Test Oracles, Test Validation With Models
- Application of Model Checking in Testing
- Model-Based V&V of Reactive and Object-Oriented Systems

- Model-Based Verification and Validation of Tests
- Experience Reports and Requirements from Model-Based V&V and Model-Based Development in Practice

### **Format and Proceedings**

The MVV workshop will be co-located with QRS 2015. Registered workshop attendees can attend all the technical and social events at the main conference and the workshop. Accepted papers will be published in the QRS 2015 Companion and will be made available in the IEEE digital library and EI indexed as well.

### **General Inquiries**

For more detailed and updated information, please refer to <http://paris.utdallas.edu/qrs15>, or contact Professor [Tugkan Tuglular](#) (Izmir Institute of Technology, Turkey), Professor [Fevzi Belli](#) (Izmir Institute of Technology, Turkey)

### **Programme Committee**

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