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FT4DAS 2019

<https://ft4das.github.io>

1st Workshop on Formal Techniques for Dependable Autonomous Systems Co-located with SafeComp-2019

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Theme

Autonomous systems have been increasingly deployed in safety and mission critical application. For example, future autonomous cars are ready to hit the public roads in a few years. Due to a direct impact on human-lives, their functional safety, security and dependability are important for both general public and Original Equipment Manufacturers (OEMs). Formal Methods techniques have the potential to address some of the most important verification and dependability challenges associated with such autonomous systems. Indeed, industrial standards, such as ISO 26262, ISO 61508, IEC 62304, EN 50128 explicitly recommend the use of formal methods in the design and development of autonomous systems. The main purpose of this workshop is to bring together people from both industry and academia and serve as a forum to discuss practical applications of formal methods. Moreover, we believe this workshop will help to discuss the readiness of formal methods in industrial applications by discussing the needs of autonomous systems industry and challenges faced by formal methods researchers.

The focus of the workshop will be on formal verification techniques for the modeling, analysis and verification of safety and security critical autonomous systems. We encourage submissions on interdisciplinary approaches that bring together various formal methods and techniques such as model checking, runtime verification and theorem proving.

Topics of Interest

Topics of interest include (but are not limited to)

- Formal modeling, requirement specification & validation for autonomous systems
- Formal verification of AI and ML algorithm for autonomous systems
- Runtime verification of safety and security properties
- Combination of formal, semiformal and informal approaches
- Formalization of probability, reliability and statistical metrics
- Formal Verification of security & privacy aspects of autonomous systems
- Hybrid systems
- Reliability, maintainability, and security issues in autonomous systems

- Formal modeling of ethical issues in autonomous systems
- Benchmarks for autonomous Cyber-physical systems
- Formal verification & international standards (e.g., ISO26262, IEC61508, DO178)
- Formal verification for safety and security assurance cases
- Formal verification and safety of the intended functionality (SOTIF)

Application domains include:

- Autonomous aerospace and avionics systems
- Autonomous/semi-autonomous automotive systems
- Autonomous robotics
- Human factors in autonomous systems

Submission Details

There are three categories of submissions:

- Regular papers (including case studies) describing developed work with theoretical or experimental results (up to 12 pages)
- Short papers on experience reports, tools or work in progress with preliminary results (up to 6 pages)
- New idea papers with innovative and thought-provoking research plans (up to 4 pages)

Accepted papers will be published by Springer in Lecture Notes in Computer Science volume and will be provided as a complementary book to the SafeComp 2019 proceedings. Please keep your paper format according to Springer LNCS style guideline. Papers must be submitted electronically through EasyChair Link: <https://easychair.org/conferences/?conf=ft4das2019>

Important Dates

- Full paper Submission: May 13, 2019
- Notification of acceptance: June 1, 2019
- Camera-ready submission: June 10, 2019
- Workshop: September 10, 2019