ECRTS '21

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33rd Euromicro Conference on Real-Time Systems (ECRTS'21)

ECRTS is the premier European venue in the area of real-time systems and, alongside RTSS and RTAS, ranks as one of the top three international conferences on this topic.

Owing to the uncertain pandemic outlook, ECRTS 2021 will be held online as a virtual conference on July 7-9, 2021.

SCOPE AND TOPICS OF INTEREST

Papers on all aspects of timing requirements in computer systems are welcome. Systems of interest include not only hard real-time systems, but also time-sensitive systems in general (with soft requirements expressed in terms of tail latency, latency SLAs, QoS expectations, etc.). Typical applications are found not only in classical embedded and cyber-physical systems, but also increasingly in cloud or edge computing contexts, and often stem from domains such as automotive, avionics, telecommunications, healthcare, robotics, and space systems, among others. To be in scope, papers must address some form of timing requirement, broadly construed.

ECRTS welcomes theoretical and practical contributions (including tools, benchmarks, and case studies) to the state of the art in the design, implementation, verification, and validation of time-sensitive systems.

In recent years, papers presented at ECRTS have addressed:

- all elements of time-sensitive COMPUTER SYSTEMS, including operating systems, hypervisors, middlewares and frameworks, programming languages and compilers, runtime environments, networks and communication protocols, FPGAs, time-predictable processors and memory controllers, etc.;

- static and dynamic techniques for RESOURCE DEMAND ESTIMATION, including stochastic and classic worst-case execution time (WCET) analysis, analyses to bound memory and bandwidth needs, and methods

for determining the energy, power, or thermal footprint of real-time applications;

- FORMAL METHODS for the verification and validation of real-time systems, including model checking, computer-assisted proofs, and runtime monitoring systems;

- the interplay of timing predictability and other NON-FUNCTIONAL QUALITIES such as reliability, security, quality of control, energy/power consumption, environmental impact, testability, scalability, etc.;

- foundational SCHEDULING and PREDICTABILITY questions, including schedulability analysis, algorithm design, locking and non-blocking synchronization protocols, computational complexity, temporal isolation, probabilistic guarantees, etc.; and

- last but not least, emerging topics such as the use of MACHINE LEARNING techniques in safety-critical systems.

The above list of topics is intended only as coarse summary of recent proceedings and should not be understood as an exclusive list of interests. To the contrary, papers breaking new ground, departing from established subfields, or challenging the status quo are most welcome and highly encouraged.

The models, assumptions, and application scenarios upon which papers build must be properly motivated. Whenever relevant, we strongly encourage authors to present experimental results (preferably based on real data, but synthetic test cases are acceptable) and/or to demonstrate applicability of their approach to real systems (examples can be found at ecrts.org/industrialchallenge). We encourage open-source initiatives and computer-assisted proofs in order to increase confidence in practical and theoretical results and to improve their reusability.

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Event Details

Location: Virtual

URL: https://www.ecrts.org/

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