

Euromicro Conference on Digital System Design (DSD) 2015

The Euromicro Conference on Digital System Design (DSD) addresses all aspects of (embedded, pervasive and high-performance) digital and mixed hardware/software system engineering, down to micro-architectures, digital circuits and VLSI techniques. It is a discussion forum for researchers and engineers from academia and industry working on state-of-the-art investigations, development and applications.

It focuses on advanced circuit and system design and design automation concepts, paradigms, methods and tools, as well as on modern implementation technologies from full custom in nanometer technology nodes to FPGA and to multicore infrastructures. Design and Verification Languages and Standards, High Level Synthesis, Efficiency, Density, Signal Integrity, Testability, Timing Analysis and Timing Closure, Asynchronous Techniques, Reconfigurable Architectures, Power Consumption, Computational Power Speed and Performance, Productive Design Technology and Engineering Flows, Manufacturability, Cost, Reliability, Error Resilience, Complexity, or Process Variability issues, Modeling, Design Experiences are covered in DSD.

Our research in the department of Computer Engineering at Tallinn University of Technology has also been focused on concurrent online detection of faults in digital circuits, including Network-on-Chip routing components.

The conference has two main tracks, Digital System Design (DSD) and Software Engineering and Advanced Applications (SEAA). Our paper titled “A Framework for Comprehensive Automated Evaluation of Concurrent Online Checkers” was accepted for poster presentation during the DSD event and as one of the co-authors, I was present during the event to present the poster. In this work, we proposed a framework for automated evaluation of concurrent online checkers for control-oriented digital circuits. Our goal was to achieve high fault coverage, while at the same time keeping area consumption at an acceptable range.

Since our research work might also switch from the architecture level to the system and application level, I also tried to attend sessions related to Mixed Criticality applications which were held on the last day of the conference. Moreover, there were sessions related to System-on-Chips and Network-on-Chips on the same day which covered topics such as hardware design exploration, addressing aging and power management challenges in Network-on-Chips. Definitely, some of the papers presented during the conference would overlap with our future research field, for instance, exploring the effect of faults on application level in Network-on-chips.

The other purpose of the travel was to have up-to-date information regarding latest advancements in topics related to functional verification which has also been the focus of our research and part of my PhD thesis during the first year of my PhD studies.

Moreover, meeting different well-known people from the industry and erudite professors and researchers who are expert in the field would be a great opportunity for everyone, specially researchers and PhD students to build an infrastructure for future collaborations or even planning for their future career.

The 18th Euromicro Conference on Digital Systems Design took place as 3-day event in Funchal, Madeira, Portugal from August 26th until 28th, 2015 and it was held in Pestana Casino Park hotel. Each track of the conference included keynotes, which the first one on the first day, started with a speech by the CEO of Synopsys. In summary, both research-wise and leisure-wise the conference event was beneficial and I look forward to being able to further develop our current research and publishing further papers in the upcoming events.

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August 30th 2015