



**THU**  
Technische  
Hochschule Ulm  
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Applied Sciences

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Program

3<sup>rd</sup> Workshop

# **PROGRAMMABLE PROCESSING FOR THE AUTONOMOUS / CONNECTED VEHICLE**

**– FROM CLASSICAL FPGA TO ACAP**

**ALGORITHMS. ARCHITECTURE. REALIZATION. TEST.**



17<sup>th</sup> July 2019

THU. Campus Albert-Einstein-Allee. 89075 Ulm. Germany.



**Program**

**17<sup>th</sup> July 2019**

08:30 - 09:20	<b>Registration</b>
09:20 - 09:30	<b>Welcome Note</b> Prof. Dr. Marianne von Schwerin, Vice President for Research and international Affairs, THU
09:30 - 10:00	<b>Opening Remarks from the Program Committee</b> Prof. Dr. Anestis Terzis, THU, Dr. Endric Schubert, MLE, Mathias Güthoff, Xilinx
10:00 - 10:45	<b>Keynote: Connected Foresight</b> Martin Arend, General Manager E/E Architecture and Technologies, BMW Group
10:45 - 11:15	<b>Design Challenges for a Zone-based Automotive Network Architecture</b> Prof. Dr. Elmar Cochlovius, Furtwangen University Co-Author: Dr. Andrea Tomatis, Director Engineering, Soft-in
11:15 - 12:00	<b>Security / Trusted Execution Environment und Functional Safety mit einem SoC-FPGA</b> Andreas Schuler, Director Applications, Missing Link Electronics, Neu-Ulm Sebastian Stiemke, Director Operations, Missing Link Electronics, Neu-Ulm
12:00 - 13:15	<b>Lunch / Networking</b>
13:15 - 14:00	<b>ZF ProAI Supercomputing Architecture - A Platform for Autonomous Driving</b> Wolfgang Vieweger, Senior Manager, ZF Friedrichshafen AG
14:00 - 14:30	<b>Accelerated ML classification and clustering using FPGAs</b> Dr. Chris Kachris, CEO and co-founder at InAccel
14:30 - 15:00	<b>FPGA based hybrid Architecture for Automotive Camera Monitor Systems</b> Steffen Jannik Maier, Researcher, Institute of Communication Technology, THU Co-Authors: Johannes Schäfer, Prof. Dr. Anestis Terzis
15:00 - 15:30	<b>Image Signal Processing with Zynq® UltraScale+™ MPSoC for Automotive Cameras</b> Johannes Schäfer, Student (B.Eng.-Candidate), Institute of Communication Technology, THU Co-Authors: Steffen Jannik Maier, Prof. Dr. Anestis Terzis
15:30 - 16:00	<b>Coffee Break / Networking</b>
16:00 - 16:45	<b>Architecture Choices for FPGA-Processing of Deep-Neural Networks</b> Michaela Blott, Distinguished Engineer, Xilinx Research, Dublin
16:45 - 17:15	<b>A Software-Defined Radar Using Xilinx' RFSoc</b> Benedikt Schweizer, Akademischer Mitarbeiter, Ulm University Co-Authors: Simon Stephany and Prof. Dr. Christian Waldschmidt
17:15	<b>Closing Remarks</b>



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### Registration:

The fee for this workshop is 50 € and includes lunch. The participation for students and employees of the Technische Hochschule Ulm is free of charge. Payment is due on receipt of the invoice after the workshop.

Seating is limited. Please register via email with your name, contact info and company affiliation that we can reserve a seat for you. Please use the following email address to register:

**Registration Address:**  
**[fpga2019@missinglinkelectronics.com](mailto:fpga2019@missinglinkelectronics.com)**

### Venue:

Technische Hochschule Ulm, Campus Albert-Einstein-Allee, Albert-Einstein-Allee 55  
89081 Ulm, Germany, Room Q029

### Directions to Campus Albert-Einstein-Allee:

<https://studium.hs-ulm.de/de/Seiten/Standorte.aspx>

### Speaker / Program changes:

Occasionally it is necessary for reasons beyond our control to alter the contents and timing of the program or the identity of the speakers.

### Impression:

<http://www.missinglinkelectronics.com/fpga2017>

<http://www.missinglinkelectronics.com/fpga2018>

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**Program Committee:** Prof. Dr. A. Terzis, Dr. E. Schubert, M. Güthoff **Conference Language:** German and English  
**Contact:** Prof. Dr. A. Terzis, Eberhard-Finckh-Straße 11, 89075 Ulm, Fon: +49 (0731) 50-28341, [terzis@hs-ulm.de](mailto:terzis@hs-ulm.de)

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## Speakers of the previous events

### 2<sup>nd</sup> Workshop in 2018:

Wolfgang Fey (Sen. Manager Assisted Driving Control Systems, Continental)

Dr. Karsten Trott (FAE, Xilinx)

Felix Eberli (Department Head, Supercomputing Systems AG)

Dr. Petros Kapsalas (Computer Vision Expert, Panasonic Automotive & Industrial Systems)

Jochen Frensch (Lead Engineer, Mentor Embedded, Mentor Graphics Development (Deutschland) GmbH)

Mark Leznik (Researcher, Institute of Information Resource Management, Ulm University)

Philipp Hoffmann (Project Manager Interior Concepts Entry Class Vehicles, BMW Group)

Steffen Jannik Maier (Researcher, Ulm University of Applied Sciences)

Tobias Augspurger (Group Leader Department Autonomous Logistics, StreetScooter GmbH)

### 1<sup>st</sup> Workshop in 2017:

Prof. Dr. Anestis Terzis (Ulm University of Applied Sciences)

Felix Eberli (Supercomputing Systems AG)

Jun.-Prof. Dr. Stephan Reuter (Ulm University)

Prof. Dr. Rainer Lienhart (Augsburg University)

Nick Ni (Xilinx)

Vinod Kathail (Xilinx)

Kay Migge (Xilinx)