

Workshop on Xilinx FPGA for real-time video processing

Accelerate the design through Digilent ZYBO Z7 & Vivado HLS

Tuesday 5th of June 2018

ETZ K63, Gloriastrasse 35, Zurich CH-8092

Presenter: Ciprian Hegbeli (Digilent Inc)

Description:

The workshops keeps in line with Digilent's mission of providing hands-on, project-based, open-ended approach to education. Support your curriculum with an upcoming workshop featuring the Zybo Z7 Zynq-7000 Trainer Board and Pcam 5C sensor. This workshop will lead educators through a half day of hands-on learning using VHDL and C++ language. Participants will use the Zybo Z7 Zynq-7000 AP SoC to learn the basics of high level synthesis (HLS) while implementing a real-time video processing platform using a Pcam 5C MIPI imaging sensor and visualizing the results in hardware. Zybo Z7 board from Digilent and the free WebPack version of Vivado HLS from Xilinx expose students to the newest technologies both in hardware and software.

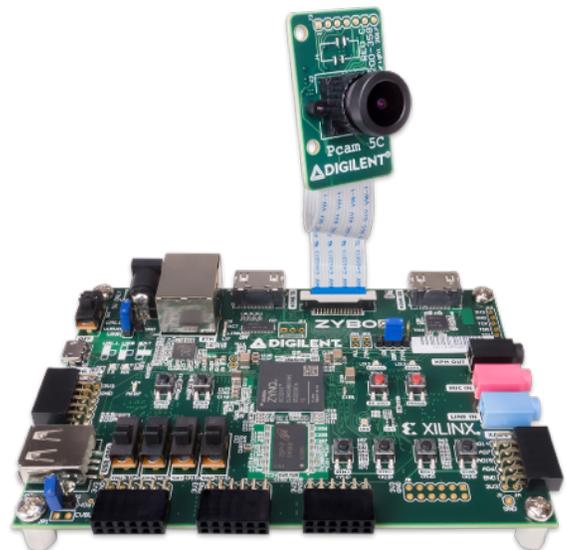
Goals of the Workshop:

- 1) Introduce participants to the basics of High Level Synthesis for FPGAs and Real-time Video Processing pipelines. Illustrate the viability of video processing in reprogrammable logic instead of software running on a general purpose microprocessor.
- 2) Demonstrate the ease of use of Digilent Video Processing Platforms.
- 3) Show how Digilent freely available Intellectual Property modules can be (re)used in customer projects.

Program:

- 13.00 Welcome
- 13.15 Digilent introduction
- 13.30 Hands-on Workshop
- 14.30 Coffee break
- 15.00 Hands-on Workshop
- 16.00 Coffee break
- 16.30 Hands-on Workshop
- 17.30 Wrap-up and Q&A
- 18.00 Workshop ends

The workshop will be held in English



Audience:

The anticipated audience includes faculty members, professors, instructors, and laboratory staff in Electrical and Computer Engineering and Engineering Technology, Mechanical Engineering and Engineering Technology, First Year Engineering Education, Engineering Physics, Physics, and middle and high school teachers in the physical sciences. Participants need to have basic knowledge about VHDL, C/C++ and digital design. They will leave the workshop with instructional materials so that participants can easily adopt this innovative technique in their own courses.

The workshop will be held in English.

Take-Away Skill, Knowledge, and Material:

Participants will learn about the active hands-on learning pedagogy, see how others have integrated hands-on learning modules into the engineering and engineering technology courses, and labs and suggestions on ways in which the participants can adapt the pedagogical approach for their use. Flash drives will be distributed that will include the workshop presentation.

About the Presenter:

Ciprian is an enthusiastic Digital Design Engineer with experience in Xilinx FPGA technologies and embedded software development. Currently, he works at the Romanian branch of Digilent Inc., a leading electrical engineering products company serving students and universities with education design tools.

For More Information:

Integrated Systems Laboratory:

<http://www.iis.ee.ethz.ch>

Microelectronic Design Center:

<http://dz.ee.ethz.ch>

Digilent, the maker of popular Xilinx based FPGA boards is now part of the National Instruments. Their products can be found under their www site:

<https://store.digilentinc.com/>