2nd PANDORA Summer School on Progression and Diversity of Reconfigurable Architectures and Tools

"TEAChER" (TEach AdvanCEd Reconfigurable architectures and tools) is a collaborative project between Karlsruhe Institute of Technology (KIT) and National Technical University of Athens (NTUA) and is funded by the German Academic Exchange Service (DAAD) with funds from the Federal Foreign Ministry (AA) through the programme "Hochschulpartnerschaften mit Griechenland". Within this project, we develop educational material for topics related to 2D and 3D reconfigurable architectures. We particularly address, amongst other things, architectural-oriented issues, CAD algorithms and efficient ways for digital design with the usage of advanced programming languages. Due to the varying demands of this domain, the developed material gets appropriately tuned for the target audience, spanning from undergraduate to PhD studies.

The 2nd PANDORA Summer School, which is part of the TEAChER project, was held at KIT from 19-23 September 2016. A selection of 20 German and Greek participants from the partner universities KIT and NTUA attended lectures, talks and hands-on labs led by experts in the fields of reconfigurable architectures, respective CAD algorithms and virtual prototyping tools. The scope of this summer school was not only to handle established and commercial technologies, but also to incorporate recent research results and trends with emphasis on 3D integration and their benefits/opportunities in the reconfigurable domain. A virtual laboratory (http://proteas.microlab.ntua.gr) which is unique to the TEAChER framework was used for lab exercises, as it serves as a perfect platform for quickly developing and evaluating custom FPGAs without the effort and expense of actual physical implementation. The summer school programme included design contests between all the participating students. The winners were six students from KIT and six students from NTUA, who were awarded prizes from Intel and Texas Instruments. Additionally, the organizers would like to thank CADENCE and Microsemi for sponsoring social activities.

Currently, we are working on a concept for the 3rd PANDORA Summer School, which will be open to a larger international target group, either as part of a conference workshop or as a self-contained event.

See http://proteas.microlab.ntua.gr/teacher for more info.

Spin-off success at Silexica: the SLX Tool Suite

Silexica, a spin-off of HiPEAC partner RWTH Aachen University has obtained a US$8 million Series A round of financing. Merus Capital led the investment round with participation from new investor Paua Ventures as well as current investors Seed Fonds Aachen and DSA Invest. The funds will allow the company to expand its capacity and adapt its technologies to additional market segments.

Although Silexica is only two years old, it has enjoyed rapid adoption of its SLX Tool Suite. The software tools use a compiler paradigm to analyze code coupled with a deep understanding of how hardware platforms behave with actual production workload. Global customers like Huawei and Fujitsu are already using these solutions and companies across multiple industries are now embracing the SLX Tool Suite. It has been broadly adopted to automate the distribution of code onto large, multicore platforms and an updated version was released in late November.

You can learn more about the SLX Tool Suite at the *Heterogeneous multicore design automation: current and future* tutorial at HiPEAC 2017 on Monday 23 January at 10.00. Multicore systems with complex architectural features such as heterogeneous processors and sophisticated power management are widely deployed in virtually all computing segments. Not only processors but also memories and interconnects have become heterogeneous. This makes designing software for such systems extremely difficult, considering the huge design space to consider for all kinds of trade-offs such as performance and area/power. The tutorial presents state-of-the-art multicore software design tools (the SLX Tool Suite) in order to demonstrate the current industrial capabilities to address such a challenge. An industrial perspective will also be provided by a leading wireless company, giving a preview of the challenges that will come in the coming five to ten years with the next wave of multicore design. As innovation often comes initially from academia, this tutorial will also discuss research results to give another angle on the same multicore design challenges.

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