Abstract:

Image processing and computer vision have been a very hot research topic within last decades. Image processing have been effectively employed in a lot of engineering and research fields such as biology, medicine, robotics, unmanned areal and terrain mobile vehicles, simulators, military, media, live streaming, web-based applications and so on. Real-time image processing using different hardware architecture founds thousands of very interesting applications ranging from robotics to computer aided navigation and simulators. It seems this field of image processing is very demanding because the research outcome can be a semi-industrial prototype, which will be marketed with a little engineering work or directly can be used in industry. So far, a lot of hardware platforms have been developed for this purpose including platforms based on FPGA, GPU, GPCPU, Mixed GPU-FPGA or CPU-FPGA. Recently, a lot of efforts have been made to design ASICs for image processing needs and to combine these ASICs with abovementioned platforms to make high performance heterogeneous architecture. The aim is to accelerate image-processing algorithms beyond the current frontier of the technology. In this talk, I am going to present you some of the very latest efforts in this regards.