

Speaker:

Steven Derrien

Title:

High Level Synthesis in the Polyhedral model

Abstract:

We will take a look at two issues for which we feel there is insufficient support in commercial HLS offerings, and describe the results from our research group targeting filling this gap. The first issue is to automate the production of customised number representations from accuracy specifications. The freedom over the choice of numerical precision is one of the key factors that can be exploited when designing the datapath of an FPGA accelerator. The second issue is to transparently support off-chip memory access in an efficient manner, where we show that it is possible to utilize the flexibility provided by FPGAs to optimize off-chip memory bandwidth in an application-specific manner.