WCPM/CSC joint seminar

Exploring the Potential for FPGA Scientific Computing Research at Warwick

Suhaib Fahmy

School of Engineering, Warwick

Monday, 23rd January, 1 p.m.
PS0.17a Seminar room, Physical Sciences, Level 0

Abstract: FPGAs are finally emerging as a serious platform for accelerating general purpose computing after decades establishing a case in the niches. As CPU performance scaling has faltered, heterogeneous computing has emerged as a potential solution. GPUs with their easy programmability have stolen a march on other architectures, but are more suited for applications that fit their architecture, and their lack of power efficiency remains a concern. While FPGAs can offer improved performance at lower power consumption, programming them remains difficult. Following on from the previous seminar that introduced FPGAs as a platform, Dr Fahmy will discuss some of the research he has been working on to simplify the design and deployment of FPGAs in both embedded and datacenter environments. This will include work on leveraging dynamic partial reconfiguration for adaptive architecture changes, coupling virtualised accelerators with CPUs, overlay architectures as a way of abstracting low level hardware details, and some of the recent advances in high level design flows. The talk concludes with a discussion on potential areas for applying these ideas in the scientific computing context at Warwick.

A buffet lunch is available from 12:45 pm.

More info: http://warwick.ac.uk/wcpm/seminars
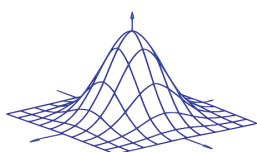
WCPM
Warwick Centre for Predictive Modelling