High-Performance Computing Group

Prof. Dr. Christian Plessl

Computer Science Department and
Paderborn Center for Parallel Computing

Student Assistant Job for FPGA Infrastructure

Student Position

At a glance	• Support our team in the area of web development & FPGA system infrastructure • Work with a wide range of technologies (FPGAs, Continuous Integration, Web) • Gain experience working with large, multi-technological and interconnected systems

The Paderborn Center for Parallel Computing (PC2) is a national high-performance computing center. As a national high-performance computing center, which is part of the NHR network, the PC2 operates the Noctua 2 HPC system. One special feature of the Noctua 2 system is the inclusion of a large number of FPGA cards as accelerators in the system. This installation of FPGA cards is the largest deployment of FPGA cards in high-performance computing in a research system. As a result, it is important that these FPGA cards are available to the user without major interruptions. To realize this high availability, the FPGA cards need to be tested, monitored and benchmarked constantly and automatically.

Tasks & opportunities:
- Establishment and development of an infrastructure to ensure the operational capability, availability and functionality of FPGA hardware accelerators. Main focus:
    - Automated Testing/Monitoring/Benchmarking with Continuous Integration (CI)
    - Clear presentation of the status of the FPGA hardware accelerators in the form of a dashboard

Requirements:
- Good knowledge in scripting languages (Bash, Python)
- Interest in the development of a utility to display the state of the infrastructure (Web)
- Basic Linux knowledge
- Ability to work independently and in a team

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