

HiWi Job

(English / German)

Thermal Management on a Parallel Operating System

All modern processors require thermal management to prevent overheating. The most relevant knob to achieve this is dynamic frequency scaling, which reduces the operating frequency of a processor. To avoid sacrificing too much performance, it is crucial to carefully select which task shall execute on which core, which cores shall be throttled to which frequencies etc. Making these decisions is the task of the operating system.

We are working in a large multi-disciplinary research project (InvasIC) which is a collaboration of several universities. This research project developed a many-core processor system (shown right), an **experimental parallel operating system**, compilers, and even new ways of programming resource-aware applications. Our next goal is to build a demonstrator to showcase the advances in research.

The goal of this HiWi job is to help integrating our developed thermal management strategies into our current prototype and to evaluate it. This involves the implementation of efficient algorithms and data structures, and their integration into the existing object-oriented software stack of the OS, both at application and hardware abstraction layer. The programming language is **C++** and for applications, it is optionally **X10** (similar to Java).

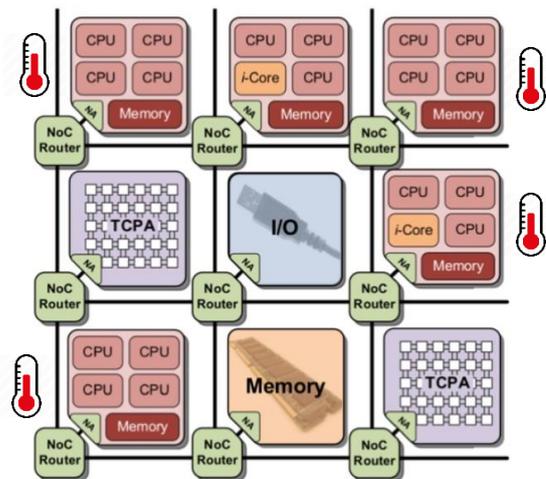
This HiWi job is also an opportunity for you to get detailed insights into how research works in practice.

Start Date

Immediately or within a couple of months.

Working hours

40 hours / month



Skills acquired within the HiWi job

- Apply your programming experience to state-of-the-art research.
- Work in a research environment.

Skills required for the HiWi job

- Basic Linux software development knowledge.
- Programming skills (C++, optionally X10)

Language

The collaboration with the colleagues can be in English or German.

Contact

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