



Paderborn University is a high-performance and internationally oriented university with approximately 20,000 students. Within interdisciplinary teams, we undertake forward-looking research, design innovative teaching concepts and actively transfer knowledge into society. As an important research and cooperation partner, the university also shapes regional development strategies. We offer our more than 2,600 employees in research, teaching, technology and administration a lively, family-friendly, equal opportunity environment, a lean management structure and diverse opportunities.

Join us to invent the future!

In the Computer Engineering Group of the Department of Computer Science and at the Paderborn Center for Parallel Computing (PC2), five positions are available starting as soon as possible:

Research Assistants (f/m/d)

(salary group 13 TV-L)

with 100% of the regular working hours. The positions can serve as qualification positions in the sense of the Wissenschaftszeitvertragsgesetz (WissZeitVG) for the funding of a dissertation, but are also open for postdocs. The positions are initially limited to three years. An extension for the respective qualification is possible within the time limits of the WissZeitVG.

The positions serve to expand the research topic "**Energy-efficient mapping of deep neural networks (DNNs) on FPGAs in the data center**". The planned research areas include the development of programming tools for the translation and parallelization of DNNs for FPGAs; the development of automated methods for runtime and energy optimization of DNNs; the exploration of approaches for modeling and measuring runtime and energy consumption during the execution of DNNs on FPGAs in our high-performance data center; the experimental evaluation of the developed methods in cooperation with application experts; and the publication of the results as open source code and training materials. Due to the close collaboration with the research institute and National High Performance Computing Center Paderborn Center for Parallel Computing, a powerful HPC infrastructure with FPGAs is available to the project for the research work and evaluation.

Your duties and responsibilities:

- Research and development in the area of mapping DNNs to FPGAs, implementation on FPGA and FPGA clusters in the data center, energy characterization, design space exploration, prototypical validation on application examples
- Presentation of results in the project team and at scientific conferences, authoring of scientific publications
- Cooperation with national and international research partners

Your profile:

- University degree or PhD in computer science, computer engineering, electrical engineering or a related discipline
- Very good knowledge of FPGA architectures and related design tools
- Expert knowledge in the area of machine learning is an advantage
- Very good knowledge in hardware related programming
- Strong analytical and organizational skills
- Very good English skills, written and oral
- Ability to work independently and with commitment

Applications from women are expressly desired and will be given preferential consideration in accordance with the LGG in the case of equal suitability, qualifications, and professional performance, unless reasons relating to the person of a co-applicant prevail. Part-time employment is generally possible. The application of suitable severely disabled persons and persons with equal rights within the meaning of the Social Code Book IX (SGB IX) is also welcome.

Applications with the usual documents (letter of motivation, curriculum vitae, final papers, certificates) are requested, quoting the reference number 5514, to: platzner@upb.de.

Information on the processing of your personal data can be found at: <https://www.uni-paderborn.de/zv/personaldatenschutz>.

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