

As part of the German government's artificial intelligence (AI) strategy, the successful Saxon competence center ScaDS.AI Dresden/Leipzig (Center for Scalable Data Analytics and Artificial Intelligence) is being expanded into a leading German AI competence center for Big Data and artificial intelligence (AI).

At the **Center for Interdisciplinary Digital Sciences**, the Department **ScaDS.AI** is offering for this purpose the position ScaDS-22.6 starting **as soon as possible** as a

Research Associate (m/f/x)

(subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

limited for 3 years with the option for extension. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG). The position offers the chance to obtain further academic qualification. Balancing family and career is an important issue. The position is generally suitable for candidates seeking part-time employment. Please indicate your request in your application.

Professional assignment: Chair of Processor Design (Prof. Dr. Akash Kumar)

Research area: Architecture, Scalability and Security

Tasks: Design and develop a framework for implementing high-performance and energy-efficient accelerators for machine learning models. The intended framework will exploit the inherent error-tolerance of machine learning algorithms to introduce deliberate approximations (inaccuracies) at the various layers of the computation stack to achieve energy-efficient accelerators without any significant loss in the output accuracy of the implementation. To explore the large design space enabled by these approximation knobs, identify and adapt a multi-objective optimization technique such as Bayesian optimization and genetic algorithms. Presentation and publication of the research results in English.

Requirements: very good Master's degree in mathematics, computer science, or a comparable engineering or natural science; very good programming skills in Python, C/C++; good understanding of machine learning, in particular, artificial neural networks; good programming skills (especially on scripting, assembly-level and C languages) as well as good hardware-design skills (especially using VHDL/Verilog and component-based design); experience with high-level synthesis and multi-objective optimization techniques; very good command of written and spoken English.

Applications from women are particularly welcome. The same applies to people with disabilities.

Please submit your comprehensive application including the usual documents, quoting the job number **ScaDS-22.6** by **August 29, 2022** (stamped arrival date of the university central mail service applies), preferably via the TU Dresden SecureMail Portal <https://securemail.tu-dresden.de> by sending it as a single pdf document to scads.ai@tu-dresden.de or to: **TU Dresden, CIDS, Herrn Prof. Dr. Wolfgang E. Nagel, Helmholtzstr. 10, 01069 Dresden, Germany**. Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: <https://tu-dresden.de/karriere/datenschutzhinweis>.