Technische Universität Dresden

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). For TUD Dresden University of Technology, diversity is an essential feature and a quality criterion of an excellent university. Accordingly, we welcome all applicants who would like to commit themselves, their achievements and productivity to the success of the whole institution.

At the **Center for Interdisciplinary Digital Sciences (CIDS)**, the **Department for Scalable Data Analytics and Artificial Intelligence (ScaDS.AI Dresden)** offers, subject to the availability of resources, two project positions funded by the European Regional Development Fund (ERDF) as

Research Associate / PostDoc (m/f/x)

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

starting **as soon as possible**. The positions are fixed-term until January 31, 2029. An extension may be possible subject to the availability of resources. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act Wissenschaftszeitvertragsgesetz – WissZeitVG). A shorter contract term is possible by arrangement.

In the **COANDRI** cooperation project, an innovative framework is to be developed that enables flexible and vendor-independent integration of a wide variety of robotic systems. At its core are five essential building blocks: First, a unified capability abstraction will be created to ensure universal connectivity of diverse systems. Second, the framework relies on declarative, versioned, and combinable skills organized in an API-like architecture. Third, COANDRI enables self-service authoring based on LLM and VLM reasoning, patented tactile-sensing hardware, and AI-assisted skill capture using smart glasses and a voice agent. Fourth, secure AI inference in a closed control loop based on Tactile Internet and 6G ensures real-time capability. Fifth, semantic modeling as a knowledge graph with long-term memory is implemented to enable adaptive and explainable skill selection. The project aims to validate the framework and the resulting robot skills on three humanoid research platforms and at least two classes of mobile robots under laboratory conditions (TRL 4). Validation covers four scenarios: hospital service tasks, mobile workshop logistics, electronics and battery assembly, and banking services.

Professional assignment: Chair of Scalable Software Architectures for Data Analytics (Prof. Dr. Michael Färber)

Research areas: Natural Language Processing, Large Language Models, Knowledge Graphs, and related fields (e.g., Graph Machine Learning)

Tasks:

- scientific research and development activities in at least one of the above-mentioned research areas
- conducting scientific research activities within the COANDRI project
- preparation of publications in internationally renowned journals and presentation of research findings at conferences

Requirements:

- a university degree (M.Sc., M.Eng., Diploma or equivalent) and, if applicable, PhD degree in Computer Science, Computer Engineering, Software Engineering, Artificial Intelligence, Intelligent Systems, Data Science, Computational Science, Mathematics, Applied Statistics, Information Science, Information Systems, Information Systems Engineering, Electronic Information Engineering, Computational Linguistics, Digital Humanities, Linguistics, or a related field
- a strong interest in fundamental research in the above-mentioned fields
- strong programming skills, preferably in Python, including experience with deep learning frameworks (e.g. PyTorch, TensorFlow) and related tools
- very good written and spoken English

- strong analytical and problem-solving skills
- high level of motivation and the ability to work both independently and as part of a team
- research experience (publications, theses, projects) in the above-mentioned research areas is a major advantage

We offer: The position comes with access to high-performance computing resources and access to training opportunities within ScaDS.AI.

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The university is a family-friendly university. We welcome applications from candidates with disabilities. If multiple candidates prove to be equally qualified, those with disabilities or with equivalent status pursuant to the German Social Code IX (SGB IX) will receive priority for employment.

Application: Please submit your detailed application with the usual documents (e.g., cover letter, CV, and other supporting documents), quoting the job reference **"ScaDS.AI-COANDRI"** by **December 8, 2026** (stamped arrival date of the university central mail service or the time stamp on the email server of TUD applies), preferably via the TUD SecureMail Portal https://securemail.tu-dresden.de by sending it as a single pdf file to **jobs-scads.ai@tu-dresden.de** or to:

TU Dresden, ScaDS.AI, Prof. Dr. Michael Färber, 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.

TUD is a founding partner in the DRESDEN-concept alliance.

DRESDEN concept

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.