

TUD Dresden University of Technology, as a University of Excellence, is one of the leading and most dynamic research institutions in the country. Founded in 1828, today it is a globally oriented, regionally anchored top university as it focuses on the grand challenges of the 21st century. It develops innovative solutions for the world's most pressing issues. In research and academic programs, the university unites the natural and engineering sciences with the humanities, social sciences and medicine. This wide range of disciplines is a special feature, facilitating interdisciplinarity and transfer of science to society. As a modern employer, it offers attractive working conditions to all employees in teaching, research, technology and administration. The goal is to promote and develop their individual abilities while empowering everyone to reach their full potential. TUD embodies a university culture that is characterized by cosmopolitanism, mutual appreciation, thriving innovation and active participation. For TUD 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.

The **Cluster of Excellence Centre for Tactile Internet with Human-in-the-Loop (CeTI)** offer a project position as

**Junior Research Group Leader (m/f/x)  
for Research Area – Semantic Communication and Networked Hybrid-Computing**

(subject to personal qualification, employees are remunerated according to salary group E 15 TV-L)

starting **as soon as possible**. The position is limited until December 31, 2032. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

**Tasks:** In this position, you will become a member of the CeTI, one of Germany's Clusters of Excellence funded by the German Research Foundation (DFG). The position offers the opportunity to work in an interdisciplinary and international research environment focusing on next-generation communication systems, real-time networking, and interactive technologies. In collaboration with researchers from computer science, electrical engineering, psychology, and human-machine interaction, you will conduct innovative research on future wireless networks, immersive communication, and the Tactile Internet.

- establishment and leadership of an independent interdisciplinary junior research group within the DFG-funded Cluster of Excellence CeTI, focusing on semantic and goal-oriented communication, over-the-air computing, analogue computing, mobile edge computing and future communication networks
- strategic leadership, further development, and coordination of the interdisciplinary research area "Semantic Communication and Networked Hybrid-Computing" within CeTI in the role of Research Area Manager
- development of an innovative research agenda at the interface of communication engineering, information theory, distributed computing, analogue computing, edge computing, artificial intelligence, and cyber-physical systems
- conducting independent research on semantic, task-oriented, and goal-oriented communication methods that optimize communication systems with respect to the objectives of applications, users, and control processes
- development of communication-computation co-design methods that enable functions, inference tasks, aggregation operations, or control decisions to be computed within communication networks
- investigation of over-the-air computing and signal-domain processing methods for distributed inference, sensing, optimization, and control
- development and evaluation of analogue and hybrid analogue-digital computing architectures for energy-efficient communication and edge-computing systems
- design of methods for the efficient placement, distribution, and orchestration of communication and computing tasks across devices, access networks, edge infrastructure, and cloud systems
- development of theoretical models, algorithms, simulation frameworks, prototypes, and experimental testbeds for future communication and computing systems

- integration and experimental validation of the developed methods in interactive, robotic, cyber-physical, and human-in-the-loop applications
- strategic coordination and long-term development of the junior research group and its interdisciplinary research activities
- academic supervision of PhD students, postdoctoral researchers, scientific staff members, and student assistants
- acquisition and management of national and international third-party-funded research projects, for example, from the DFG, BMFTR, and the European Union
- publication of research results in leading international journals and presentation at major international conferences
- establishment of interdisciplinary and international research collaborations and contribution to collaborative research initiatives within CeTI

#### Requirements:

- a university and a PhD degree in a relevant field such as communication engineering, electrical engineering, information theory, or a closely related discipline
- an outstanding academic profile with proven research expertise and professional experience in one or more of the following areas: semantic or goal-oriented communication, over-the-air computing, analogue computing, communication networks, distributed computing, or mobile edge-cloud systems
- research experience in next-generation communication and computing systems, including topics such as communication-computation co-design, edge intelligence, distributed inference, networked control, software-defined networking, network function virtualization, or edge-cloud orchestration
- a strong theoretical and methodological background and professional experience in the analysis, design, and optimization of communication, computing, and information-processing systems
- experience in developing and applying theoretical, computational, simulation-based, or experimental research methods
- experience in applying for, coordinating, and carrying out challenging research projects, as well as in research and project management
- a proven track record in securing to competitive external research funding, for example, from the DFG or the European Union
- strong academic visibility demonstrated through publications in internationally recognized journals and conferences, as well as through international research collaborations
- leadership experience, preferably in interdisciplinary and international research teams
- experience in academic supervising PhD students, postdoctoral researchers, students, or scientific staff members
- experience in interdisciplinary research particularly at the interface of communication, computing, information theory, and cyber-physical systems
- excellent communication and organizational skills, particularly with regard to effective collaboration in a diverse, international, and interdisciplinary research environment
- excellent written and spoken English

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 (including cover letter, CV, publication list, certificates and a 2-3 page research proposal) by **July 22, 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 [recruiting.ceti@tu-dresden.de](mailto:recruiting.ceti@tu-dresden.de) or to:

**TU Dresden, Cluster of Excellence CeTI, Frau Isabel Delkus, 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>.