Technische Universität Dresden

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.

At the **Faculty of Electrical and Computer Engineering, Institute of Communication Technology,** the **Deutsche Telekom Chair of Communication Networks** offers a project position as

Research Associate (m/f/x)

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

starting **January 1, 2027.** The position is limited until June 30, 2028. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

Tasks: This position investigates robotic vision as a demanding application-layer use case for 6G and future communication networks, within the context of a 6G-related research project. Rather than starting from network infrastructure, the work starts from the robot: the researcher will characterize the sensing, bandwidth, latency, and reliability requirements that real-time robotic vision imposes (high-resolution multi-camera streams, depth/point-cloud data, and low-latency perception-to-action loops) and translate these into concrete requirements and target KPIs for next-generation networks. In this sense, robotics and robotic vision serve as a testbed and requirement-setting application for the network research, rather than the other way around.

Building on this, the researcher will design and evaluate vision pipelines that operate under realistic network constraints (bandwidth limits, latency, jitter, packet loss) and explore techniques such as adaptive compression, edge/cloud offloading of perception tasks, and prioritization or semantic filtering of visual data streams. This includes running experiments on hardware or simulated network testbeds, and contributing robotics-driven requirements and use cases, for example, defining what connectivity guarantees actually need to look like for a vision-guided robotic task to succeed. The position combines hands-on work with vision hardware and pipelines with a strong communication-network-oriented research angle, positioning robotics as one of the applications shaping the design of future networks.

Requirements:

- university degree (Diploma/Master) in Electrical Engineering, Telecommunications, Information Technology, Computer Science, or similar.
- Good understanding of computer vision fundamentals (camera models, calibration, image/point-cloud data)
- Background knowledge in communication networks; familiarity with 5G/6G concepts is a strong plus
- Proficiency in Python and/or C++
- Experience with edge/cloud computing, task offloading, network simulation tools, streaming protocols, semantic communication concepts is a plus.

We offer:

- the opportunity for engaging and independent work within a flat hierarchy, in an open-minded team and supportive atmosphere
- flexible working hours
- 30 days of vacation per year (based on a 5-day workweek)

- extensive opportunities for professional development and continuing education
- health care and sports programs offered by TUD
- a discounted job ticket (also available as a Deutschlandticket)
- participation in the supplementary pension scheme for employees in the public sector via VBL (Federal and State Government Employees Retirement Fund)

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 by **September 23, 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 **isabel.delkus@tu-dresden.de** or to:

TU Dresden, Deutsche Telekom Professur für Kommunikationsnetze, 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.