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 Communications Technology, the Deutsche Telekom Chair of Communication Networks offers a project position under the BMWK project DAKORE as

Research Associate (m/f/x)
(Subject to personal qualification, employees are remunerated according to salary group E 13 TV-L)

starting 01.01.2024. The position is limited until June 30, 2025. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz – WissZeitVG).

Tasks: As a member of the Deutsche Telekom Chair of Communication Networks you will play a crucial role in advancing our wireless communication projects as a C++ developer responsible for network simulations and ML/AI integration. You will have the opportunity to work on diverse and exciting topics related to intelligent wireless communication networks, sustainable digitalization, and AI/ML methods to reduce the network's energy consumption. We need someone with a strong technical background who can help us to implement and simulate our research ideas using the NS3 Framework to validate our models before a real-world demonstration. Your key responsibilities will be:

• Design and implement network simulation using the NS3 framework for a multi-cell and realistic 5G network scenario (including macro, small, and femto cells).
• Collaborate with skilled researchers to develop, train, and integrate ML/AI models to improve the energy efficiency of the network.
• actively perform debuggers such as GDB and memory checkers such as Valgrind.
• Process and analyze large datasets to extract relevant features and validate the accuracy and reliability of the models.
• Provide technical support and assistance to team members and project partners, ensuring smooth project execution.

Requirements:
• university degree (Master or Diploma) in Electrical Engineering, Telecommunication, Computer Science, or a related field.
• Proficiency in C++ and Python.
• strong experience of data structures, inheritance, polymorphism and templating in C++.
• Experience with designing modeling machine learning algorithms and frameworks.
• familiarity with networking protocols and standards such as TCP/IP, UDP, and Link layer protocols
• strong problem-solving skills and ability to work in a collaborative team environment.
• excellent communication skills to convey complex technical concepts effectively.
• Experience developing wired/wireless networks with NS2 or NS3 simulation environments is a plus.

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The University is a certified family-friendly university and offers a Dual Career Service. 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.

Please submit your detailed application with the usual documents by October 30, 2023 (stamped arrival date of the university central mail service or the time stamp on the email server of TUD applies) to: TU Dresden, Fakultät Elektrotechnik und Informationstechnik, Institut für Nachrichtentechnik, Deutsche Telekom Professur für Kommunikationsnetze, z.Hdn. Herrn Dr.-Ing. Juan A. Cabrera, Helmholtzstr. 10, 01069 Dresden, Germany or/preferably via the TUD SecureMail Portal https://securemail.tu-dresden.de by sending it as a single PDF file to juan.cabrera@tu-dresden.de. 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.