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 Computer Science, Institute of Computer Engineering, the Chair of Compiler Construction 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 as soon as possible.

Project: “Genomics: Hardware/software co-design for genome analysis using emerging technologies” jointly funded by the European Union and Sächsische Aufbaubank (SAB).

Research area: Programming models for near-memory and in-memory computing systems

Terms: The position is limited to November 30, 2025 (with the option to be extended, subject to further funding projects approvals) and comprises 100% of the full-time weekly hours. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

Position and Requirements: We, at the Chair of Compiler Construction, have the long-term vision of shaping how future electronic systems are programmed. This includes defining novel programming methods and compiler infrastructures to deploy optimized software onto heterogeneous computing systems based on novel technologies and computing paradigms. GenomICs seeks to provide the technology to make genome analysis faster and energy efficient, by exploiting the full potential of novel computing paradigms including in-memory and near-memory computing. In this context, we are looking for a highly motivated researcher with interests and background in optimizing high-level compilers, domain-specific architecture, and design methodologies for heterogeneous systems. We aim at attracting the best talent in the respective research fields and expect the following:

- an outstanding university degree (master/ diploma or equivalent) in computer science, mathematics, electrical engineering or a relevant area;
- experience in compilers (LLVM/MLIR), domain-specific architectures (based on near-/in-memory computing, systolic arrays, FPGAs, ASICs), and optimization techniques;
- sound knowledge of software development;
- inter- and multidisciplinary thinking;
- Knowledge of genome analysis pipelines is beneficial.
What we offer: You will join a team of enthusiastic researchers who pursue creatively their individual research agenda. The chair is also part of the “Center for Advancing Electronics Dresden” (cfaed) and the “Center for scalable data analytics and artificial intelligence Dresden/Leipzig” (SCADS.AI) which offers plenty of resources and structures for career development.

Informal enquiries can be submitted to Dr.-Ing. Asif Ali Khan, Tel +49 (351) 463 43729; Email: asif_ali.khan@tu-dresden.de.

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.

Application Procedure: Complete applications (in English only) including motivation letter, CV, copy of degree certificate, transcript of grades (i.e. the official list of coursework including your grades) and proof of English language skills should be submitted preferably via the TUD SecureMail Portal https://securemail.tu-dresden.de by sending it as a single pdf file quoting the reference number “genomics2024-CCC” in the subject header to asif_ali.khan@tu-dresden.de or to: TU Dresden, Fakultät Informatik, Institut für Technische Informatik, Professur für Compilerbau, Herrn Dr.-Ing. Asif Ali Khan, Helmholtzstr. 10, 01069 Dresden, Germany. The closing date for applications is May 31, 2024 (stamped arrival date of the university central mail service or the time stamp on the email server of TUD applies). 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.

About cfaed
The cfaed is a Central Academic Unit which brings together 200 researchers from TUD and ten other research institutions in the areas of Electrical and Computer Engineering, Computer Science, Materials Science, Physics, Chemistry, Biology, and Mathematics. The cfaed addresses the advancement of electronic information processing systems through exploring new technologies which overcome the limits of today's predominant CMOS technology.

www.tu-dresden.de/cfaed