Technische Universität Dresden - Cluster of Excellence “Responsible Electronics in the Climate Change Era (REC²)

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, it is a globally oriented, regionally anchored top university, focusing on the grand challenges of the 21st century. It develops innovative solutions for the world's most pressing issues. The Cluster of Excellence “Responsible Electronics in the Climate Change Era (REC²)” addresses the key challenge posed by the ubiquitous use of electronics, which leads to an enormous resource and energy consumption and the generation of electronic waste. REC2 establishes the scientific foundation for the electronics of the future, including new material platforms, component concepts, and integrated systems that enable the realization of responsible electronics in an ecologically, economically, and socially sustainable manner. In a range of research and academic programs, REC2 unites the natural and engineering sciences with the humanities, social sciences, and medicine. This wide range of disciplines is a special feature not only of the Cluster, but also of TUD, facilitating interdisciplinarity and transfer of science to society. As a modern employer, TUD 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. For TUD, diversity is an essential feature and a quality criterion of an excellent university. Accordingly, we welcome all applicants who are committed to contributing their achievements and productivity to the success of the entire institution.

Research Associate / PhD Student / PostDoc (m/f/x)

The Cluster of Excellence REC2 offers (subject to the availability of resources), at the Faculty of Computer Science, Institute of Computer Engineering, Chair of Compiler Construction, a full-time project position as Research Associate / PhD Student / PostDoc (m/f/x) (subject to personal qualification employees are remunerated according to salary group E13 TV-L) starting January 1, 2026. The position is limited to 3 years, with the option of extension subject to further projects. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz – WissZeitVG).

City: Dresden; Starting date (earliest): 01/01/26; Duration: The position is limited to 3 years, with the option of extension subject to further projects.; Remuneration: subject to personal qualification employees are remunerated according to salary group E13 TV-L; Reference number: w25-303; Closing date: 01/12/25

Working field

At the Chair of Compiler Construction, we have a 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 in both the embedded and high-performance computing domains. In the context the Cluster of Excellence REC², we seek a highly motivated researcher with a proven track record in areas relevant to heterogeneous and emerging systems and programming models and optimizing methodologies for edge computing. The selected candidate will be

able to work on cutting-edge innovations to support the electronics systems of the future. Exchange and collaboration with a diverse team of scientists from the REC2 Cluster, in particular with those from the fields of sustainability and social sciences, along with experts in natural sciences and engineering.

Requirements

We aim to attract the best talent in the respective research fields and expect the following:
— an outstanding university and, if applicable, PhD degree (or equivalent) in computer science, mathematics, electrical engineering, or a relevant area
— research experience, preferably in programming languages, compilers, applied mathematics, and optimization techniques
— a strong background in compiler, code generation, and machine learning would be beneficial;
— an independent, target- and solution-driven work attitude
— inter- and multidisciplinary thinking
— an integrative and cooperative personality with excellent communication and social skills
— fluency in English - written and oral
— knowledge of compiler frameworks such as LLVM IR, TVM, or MLIR is highly beneficial

What we offer

You will join a team of enthusiastic scientists who pursue creatively their individual research agenda inspired by the cluster’s innovative approach and support. Your PhD/Postdoc research will be fostered by the REC2 philosophy to promote aspiring researchers, which includes:
— access to state-of-the-art research of leading academic institutes
— possibility to apply for GreenRiskFunds to pursue your own high-risk/high-gain research ideas
— possibility of exchange with partner institutions in the Global South
— promotion of gender equality and a family-friendly work environment
— for PhD students, supervision via a dual supervision concept, including a structured PhD project plan, international exchange, and a dedicated Thesis Advisory Committee (TAC)
— mentorship via the REC2 mentoring board

Application

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. 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 (in English only) with a 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 by December 1, 2025 (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 jeronimo.castrillon@tu-dresden.de or to:
TU Dresden, REC2, Prof. Jeronimo Castrillon, 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.
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.

More information at https://stellenticket.de/199413/TUBS/
Offer visible until 01/12/25