

Faculty of Computer Science

At the **Institute of Computer Engineering** the **Chair of Compiler Construction** offers a fixed-term project position as

Postdoc researcher (m/f/x)

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

starting **September 1, 2023**.

Research areas: High-level programming frameworks and optimizations for domain-specific computing

Terms: The position is limited to **31.09.2026** (with the option to be extended). 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 in both the embedded and high-performance computing domains. In this context, we are looking for a highly motivated researcher with a proven track record in areas such as programming languages, domain-specific languages, optimizing high-level compilers, and heterogeneous systems in general. The candidate will have the possibility to lead a team of researchers with expertise in emerging memory technologies and emerging computing paradigms (for instance, in-memory/near-memory computing and dataflow architectures). We investigate methodologies for domain-specific computing with a focus on machine learning, bioinformatics and, simulations in high-performance computing, among others. The candidate will profit from the vibrant research community around machine learning of the SCADS.AI center (<https://scads.ai>) as well as robotics and distributed systems of the 6G-life hub (<https://6g-life.de>).

We aim at attracting the best talent in the respective research fields and expect the following:

- an outstanding university PhD degree (or equivalent) in computer science, mathematics, electrical engineering or a relevant area;
- research experience, preferably in programming languages, compilers, applied mathematics, optimisation techniques;
- a strong background in computer architecture and emerging computing paradigms (in/near-memory computing, neuromorphic computing and/or quantum computing) 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 are highly beneficial.

Informal enquiries can be submitted to Prof. Dr.-Ing. Jeronimo Castrillon, Tel +49 (351) 463 42716; Email: jeronimo.castrillon@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.

What we offer

You will join a team of enthusiastic researchers who pursue creatively their individual research agenda. The chair is a part of the "Center for Advancing Electronics Dresden", which offers plenty of resources and structures for career development.

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 TU Dresden SecureMail Portal <https://securemail.tu-dresden.de> by sending it as a single pdf document quoting the reference number **PhD2306-CCC** in the subject header to jeronimo.castrillon@tu-dresden.de or alternatively by post to: **TU Dresden, cfaed, Professur für Compilerbau, Herrn Prof. Jeronimo Castrillon, Helmholtzstr. 10, 01069 Dresden, Germany**. The closing date for applications is **June 30, 2023** (stamped arrival date of the university central mail service 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 cluster which brings together 200 researchers from TU Dresden 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



About TU Dresden

The TU Dresden is among the top universities in Germany and Europe and one of the eleven German universities that were identified as an 'elite university' since 2012. As a modern full-status university with 17 faculties it offers a wide academic range making it one of a very few in Germany.