



With more than 6,300 employees in research, teaching and administration and its unique profile, TU Dortmund University shapes prospects for the future: The cooperation between engineering and natural sciences as well as social and cultural studies pro-motes both technological innovations and progress in knowledge and methodology. And it is not only the more than 32,500 students who benefit from that.

PhD position w38-26

At TU Dortmund University, a position as a Research Associate (m/f/d) in Production Engineering (Machining) is available in the Virtual Machining (VM) research group starting 01 October 2026. The position is initially limited to three years. Remuneration will be in accordance with the collective agreement for the public sector of the federal states (TV-L), pay grade E13.

This is a full-time position (100%), a reduction of working hours is generally possible. The position offers the opportunity to pursue a doctoral degree (PhD).

What we offer:

As a successful candidate, you will conduct research within the Collaborative Research Unit 5888, funded by the German Research Foundation (DFG), titled "Increasing resource efficiency in data-driven modeling for the design of NC milling processes". You will work on methods for future-oriented production in a high-level, internationally connected research environment.

You will become part of the interdisciplinary VM team, where researchers from production engineering, computer science, and data science jointly address innovative research questions and develop new perspectives for production engineering. You will have the opportunity for international collaboration and to present your scientific results in high-ranking journals and at leading international conferences.

In addition to the opportunity to pursue a doctoral degree (PhD), the position offers possibilities for personal development through active support for training and professional development related to the relevant research areas.

Your tasks: Within the framework of the above-mentioned collaborative project on developing a new methodology for data-driven models for the resource-efficient design of NC-controlled milling processes, your work will focus on the development of an efficient experimental concept for the in-process acquisition of high-resolution process data. Thereby, challenges regarding sensor integration and (semi-)automated experimentation need to be addressed.

A key aspect is the assessment of process stability in milling operations. In close collaboration with our project partners, evaluating the quality of the measurement data and investigating signal-specific data processing strategies will be essential in order to establish a robust data basis for the development of data-driven models.

What you bring:

- An excellent Master's degree in Mechanical Engineering or a related field
- Knowledge and practical experience in production engineering, particularly in milling processes
- Knowledge and practical experience in the design and implementation of measurement and experimental setups as well as in working with machine tools
- Curiosity and motivation to conduct research in an interdisciplinary team

Knowledge in one or more of the following areas is an advantage:

Data analysis / data preparation / data processing | Python

The TU Dortmund University promotes diversity and equal opportunities. Convince us with your personality and expertise.

Applications from women will be given preferential treatment in accordance with the legal regulations.

It is pointed out that the application of suitable severely disabled persons is desired.

Please send your full application (covering letter, CV and qualification certificates) quoting reference number w38-26, by 24.07.2026 to:

Technische Universität Dortmund, Fakultät Informatik, AG Virtual Machining, Prof. Dr. Petra Wiederkehr, Otto-Hahn-Straße 12, 44227 Dortmund

We look forward to meeting you and are happy to answer any questions you may have at the email petra.wiederkehr@tu-dortmund.de.