



Technische Universität Berlin



Technische Universität Berlin offers an open position:

Student assistant (60 hours per month)

Fakultät V: Verkehrs- und Maschinensysteme – Institut für Strömungsmechanik und Technische Akustik – FG Dynamik instabiler Strömungen

Reference number: V-SB-0068-2025 (starting at 15/07/25 / 15.07.2025 - 25.09.2026 / closing date for applications 14/07/25)

Working field:

At the Department of Dynamics of Unstable Flows, a Python-based FEM program is being developed in the project "Energize," which not only simulates flows around components but also optimizes their shape with respect to a cost function (e.g., drag resistance). The position offers the opportunity to gain practical experience in FEM, PDE, Shape Optimization, and Optimization Algorithms. In this field of study, the advertised position includes the following supportive activities under supervision:

1. Support in running simulations with the newly developed code. (40%)
2. Support in performing validation calculations using established CFD codes (e.g., OpenFOAM) or benchmark problems. (60%)

The student assistant has the opportunity to apply the theoretical knowledge acquired in lectures on CFD and/or numerical methods in practice. The position is excellently suited to lead into a master's thesis on numerical method development, with a focus on RANS, flame modeling, or optimizer development.

Requirements:

Must criteria:

M1: Good knowledge of numerical analysis in fluid mechanics

M2: Very good programming experience in at least one of the following languages: Python, C++, C, or Fortran

M3: Good proficiency in German and/or English; willingness to acquire the necessary language skills as needed

Can criteria:

K1: Good experience with object-oriented programming

K2: Strong background in Python

K3: Good experience with CFD (Computational Fluid Dynamics)

K4: Basic experience with Finite Element methods

K5: Enthusiasm for classes like CFD, numerical mathematics, numerical simulation techniques in engineering, fundamentals of continuum theory, variational calculus, and optimal control

Party responsible for specialist area / point of contact for job posting: Kai Hildebrandt

Period of employment: 15.07.2025 - 25.09.2026

Apply to: office@hfi.tu-berlin.de

Please submit your written application including cover letter, your CV, certificate of enrollment, and where applicable, current transcript of records, with the reference number to the place of employment indicated above.

In the interest of promoting equality opportunities for men and women, applications from women with suitable qualifications are particularly encouraged.

The vacancy is also available on the internet at
<https://www.personalabteilung.tu-berlin.de/menue/jobs/>

