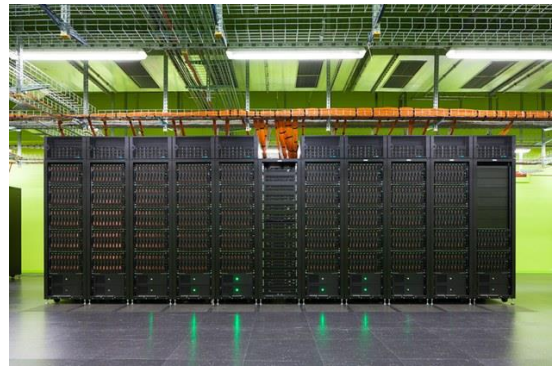


Student Assistant (HiWi) Job

The institute for Structural Analysis is looking for student assistants for improving code reliability by means of most modern programming languages like **Julia**. Implementations of novel methods and algorithms are performed excessively in numerical frameworks such as **Finite Element Methods** (FEM). Tracing bugs in new implementations is a significant part of the development process. The Julia programming language, developed at Massachusetts Institute of Technology (MIT), supports software developers by many modern programming paradigms and features in order to reduce the amount of typical implementation mistakes.



<https://julialang.org/>



[ZIH, TU Dresden, 2017](#)

The main objective of this student job is to implement a material model using Julia and a FORTRAN interface for a calling FEM code.

Tasks:

- Literature study concerning safe and efficient Julia implementations
- Implementation of existing material models via Julia
- Development of a Julia interface into FORTRAN code
- Testing and optimisation of the software setup

Your profile:

- Student of engineering, informatics or mathematics
- Good knowledge in **programming**, Linux and **continuum mechanics**
- Open to learn new methods and computer tools

We offer:

- Workingload up to 40 h/month
- Flexibility in working hours
- Insight into FEM tools, programming setups and HPC environments

The student assistant will be extensively supervised by Dr.-Ing. Johannes Storm. For those who are interested in Finite Element Method and High Performance Computing, we can further offer Project Work or Diplom-/Masterthesis.

For application please send your CV to johannes.storm@tu-dresden.de

Prof. Dr.-Ing. habil. Michael Kaliske, Institut für Statik und Dynamik der Tragwerke, TU Dresden