

The Engineering Risk Analysis Group at TUM is looking for a

## PhD student for Model reduction for structural reliability analysis

### About us

The Engineering Risk Analysis Group ([www.cee.ed.tum.de/era/](http://www.cee.ed.tum.de/era/)) develops and implements uncertainty quantification, engineering reliability, risk & decision analysis to enhance optimal & sustainable decision-making for civil systems and the environment. This PhD project will be carried out in collaboration with Prof. Elizabeth Qian from GeorgiaTech (<https://www.elizabethqian.com>) and Prof. Elizabeth Ullmann (Department of Mathematics, TUM).

### Your profile:

- M.Sc. degree in Applied Mathematics or Civil, Mechanical, Aerospace, or Electrical engineering, or another relevant field.
- Excellent grades in courses on numerical methods for partial differential equations, quantitative risk analysis, probabilistic modelling, or equivalent
- Experience with theoretical analysis of numerical methods or model reduction for differential equations is a plus
- Experience in numerical programming in MATLAB, Python, C/C++ or equivalent
- Excellent analytical skills, strong interest and capabilities in quantitative analysis
- Proficiency in English (both written and oral), German is a plus
- Strong communication skills

### The position

- We offer a funded PhD position (75% TV-L E13), financed by the TUM Institute of Advanced Studies and the TUM Georg Nemetschek Institute of Artificial Intelligence for the Built World.
- You will develop efficient computational methods for estimating rare events for structural reliability analysis using projection-based reduced models. The expected project outcomes are both new methods and accompanying theoretical analyses.
- The position is part of an international collaboration for which the PhD candidate will have the opportunity for an extended research visit at Georgia Tech in Atlanta, USA.
- The earliest starting date is December 1, 2023.
- The successful candidate will be enrolled in the doctoral program of the Technical University of Munich.
- You can expect a dynamic and flexible work environment. We are located in the centre of Munich.

### Application

- Applications should include your CV and a short cover letter (max. one page), explaining your interest in the position and your relevant skills and experience.
- Applications should be sent as single PDF file to [applications.era@ed.tum.de](mailto:applications.era@ed.tum.de)
- Applications will be continuously reviewed starting September 18, 2023.
- TUM is aiming to increase the number of women employees, and applications from women are expressly welcomed.
- People with disabilities, with essentially the same suitability and qualification, will be preferred.
- By submitting your application to the Technical University of Munich (TUM), you also confirm that you have taken note of the data protection information of the TUM according to Art. 13 Data Protection Basic Regulation (DSGVO) on the collection and processing of personal data in connection with your application.