Shreyas Giridharan, PhD

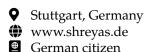
Simulation Software Developer | PhD in Computational Geomechanics

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EXPERIENCE

Senior Researcher and Lecturer, University of Stuttgart

Germany

2023 – Present

- Developed high-performance software for simulating large deformations and dynamic soil response in offshore geotechnics.
- Delivered a 95% accurate monopile prediction model compared using field data from RWE AG.
- Automated simulation workflows using Python; reduced pre/post-processing time by up to 80%.
- Principal lecturer for Computational Geomechanics in both German and English; consistently top-rated by students.
- Supervised 5+ Master's theses and mentored 10+ research assistants. *Skills*: Scientific computing, Technical leadership, bilingual teaching, team supervision.

Researcher and PhD Candidate, University of Stuttgart

Germany

2017 - 2022

- Contributed to 3 projects with 2 universities, and 5 industry partners (RWE, innogy, GuD Consult, itap, BioConsult).
- Built open-source Python/MATLAB tools for teaching advanced constitutive modelling.
- Ran finite element simulations in commercial tools to establish benchmark results for model validation.
- Delivered tutorials for 3 Master's-level courses; supervised 4 Master's theses.

Student Research Assistant, University of Stuttgart

Germany

2015 - 2016

- Implemented a novel multi-body contact algorithm in an internal codebase
- Wrote subroutines to extend existing simulation codes for fluid-structure interaction.
- Implemented constitutive model subroutines in an in-house simulation code. .

Assistant Manager, Technical Sales and Marketing, Sundram Fasteners Limited

India

2012 - 2014

- Managed a \$50M portfolio; liaised with export clients in 5 countries.
- Led feasibility studies and cost-benefit analyses for customized prototypes.
- Served as the **primary contact for international clients** and prototype deliveries. *Skills*: Stakeholder Engagement, Client Relations, Cross-Functional Collaboration.

EDUCATION

PhD (Dr.-Ing.) in Computational Geotechnics

Institute for Geotechnical Engineering, University of Stuttgart

2017 - 2022

- Thesis: Convected Particle Domain Interpolation Method for Large Deformation Geotechnical Problems. Supervisor: Prof. Christian Moormann.
- magna cum laude (Sehr Gut, German Grade: 1.0)

University of Stuttgart

Master of Science in Computational Mechanics

2014 - 2016

- Thesis: Improvement of the Frictional Contact Algorithm with application to monopile installation simulations. Supervisor: Prof. Christian Moormann.
- German Grade: 1.8

SRM University, India

Bachelor of Technology in Mechanical Engineering

2008 - 2012

- Focus: computational mechanics, thermodynamics, and fundamentals of finite element analysis.
- German Grade: 1.3
- Performance-based Scholarship Award: Top 10 students of the cohort.

TECHNICAL SKILLS

Expertise: Scientific Software development, Computational Geomechanics, Large-deformation simulations.

Programming: Fortran (~12 yrs), MATLAB (~12 yrs), Python (~8 yrs), Julia (~3 yrs), C++ (~3 yrs) *Technical*: Abaqus, ANSYS, OpenFOAM, Plaxis, NumPy, Pandas, Bash, Shell, Visual Basic, Docker, Git

Productivity: Linux, MacOS, Microsoft Office, LaTeX

LANGUAGES AND SOFT SKILLS

Native: English, Tamil

Fluent: German, Hindi, Telugu

Soft Skills: Research and teaching, leadership and mentoring, cross-cultural awareness, multilingual communication