Shreyas Giridharan

Email : shreyas.giridharan@outlook.com
https://shreyasgiridharan.github.io/

Professional Experience

- **Universität Stuttgart** Stuttgart, DE
  Institut für Geotechnik, Univ.-Prof. Dr.-Ing. habil. Christian Moormann
  Research Assistant *[Feb 2017 – Present]*
  - **Numerical tool for simulating large deformation** : Developed a Fortran based Material Point Method tool with OpenMP parallelisation, capable of simulating large deformation in solid and fluid constituents.
  - **Projects** : Team member of a Federal Ministry funded research project Visska. A numerical tool using CPDI for forecasting installation of offshore monopiles will be developed. Noise emissions in the form of hydrowaves during vibro piling will be calculated. *[Aug. 2020 – Present]*
    • Developed a multi-phase CPDI code to simulate vibratory and hammering installation of model monopiles. Validated the code by comparing numerical simulations against experimental data. Project was carried out together with RWE AG and Innogy SE. *[Sep. 2017 – Mar. 2020]*
  - **Teaching** : Coordinator for the course *Geoengineering and Geohydrology*. Lectured and tutored the courses *Engineering Materials*, *Numerical Modelling of Soils*, *Geoengineering* and *Geostatik*.
- **Sundram Fasteners Limited** Chennai, India
  Assistant Manager - Sales and Marketing *[Sep 2012 – Aug 2014]*
  - **Coordination - Development parts** : Coordinator for manufacturing feasibility study, part cost estimation and initial manufacturing layout for the Panther Engine Project components for Ford Motor Company and 8-Speed Transmission components for General Motors.
  - **Preproduction** : Served as single point contact for Prototype Parts submission for Ford Motor Company and General Motors.
  - **Lead** : Lead a multi-department team for *MMOG-A* Level certification from Ford Motor Company for entire manufacturing line successfully.

Education

- **Universität Stuttgart** Stuttgart, DE
  Master of Science in Computational Mechanics of Materials and Structures; GPA: 1.8 *[Oct. 2014 – Nov. 2016]*
- **SRM University** Chennai, India
  Bachelor of Technology in Mechanical Engineering; GPA: 1.3 (9.48/10.00) *A[ug. 2008 – May. 2012]*
  - **Award** : Performance based scholarship for Academic Year 2010-11 awarded to Top 10 students.
- **Kendriya Vidyalaya C.L.R.I.** Chennai, India
  Senior School Certificate Examination; GPA: 1.8 (81/100) *[Aug. 2006 – May. 2008]*

Projects

- **Finite Element Code** : Open source multi-phase Finite Element code developed in Fortran to perform small deformation analyses. A library of constitutive laws used in soil mechanics also available for use. Github Link
- **Visualising stress waves** : Developed a code to calculate stress waves as it passes through a body over time in Fortran. Contour plots visualised in GiD. *[2019]*
- **Dynamic Relaxation** : Material Point Method code written in Fortran to simulate large time periods using explicit time stepping algorithm, by employing large time incremental time steps in order to reduce computational costs. *[2020]*

Skills

- **Numerical tools** : Abaqus, Ansys Mechanical, Ansys Workbench, Plaxis, AutoCAD, SolidWorks
- **Programming Skills** : C++, Fortran, Python, Matlab, MS Excel VBA, Maple 18
- **Data Visualisation Tools** : GiD, Origin, Matplotlib, Gnuplot
- **Expertise** : Finite element modelling and code development, large deformation modelling
- **Languages** : English (Fluent), German (Intermediate - B1), Hindi (Fluent), Tamil (Native), Telugu (Native)
- **Other interests** : Violinist and Flautist, Linux Distro-Hopping, Open source programming

Stuttgart, August 31, 2021