Shreyas Giridharan

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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 together.
  - **Projects** : Implemented a novel multibody contact algorithm, incorporating Finite Element domain into the Material Point continuum and used the numerical tool in third-party projects for RWE and Innogy SE.
  - **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) — *Aug. 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, March 13, 2021