

# Shreyas Giridharan

Email : shreyas.giridharan@gmail.com

https://shreyasgiridharan.github.io/

Mobile : +49 (176) 432 57244

Hechinger Straße 24, 70567, Stuttgart



## PROFESSIONAL EXPERIENCE

- **Universität Stuttgart** Stuttgart, DE  
*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, GNUPLLOT
- **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, February 9, 2021