Gaddam Shiva Kumar

Ph.D. Scholar, Metallurgical and Materials Engineering, IIT Madras

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Education

Jul '22 - present **Indian Institute of Technology Madras**, Tamilnadu, India.
Doctor of Philosophy – Metallurgical and Materials Engineering, CGPA – 9/10 (Upto 1st Sem.)

Aug '20 - Jun '22 **Indian Institute of Technology Indore**, Madhya Pradesh, India.
Master of Technology – Metallurgy Engineering, CGPA – 9.39/10

Oct '12 - May '16 **JNTUH College of Engineering Manthani**, Telangana, India.
Bachelor of Technology – Mechanical Engineering, Percentage – 68.86

Research Interests

Crystal plasticity finite element modeling, Phase field modeling, Scaled boundary finite element method.

Industry Experience

Mar '17 - Dec '17 **GIS Engineer**, RMSI Pvt. Ltd., Hyderabad, India.
- developed digital maps for mobile and web applications.
- worked as a quality controller to ensure the quality of the maps.

May '15 - Jun '15 **Manufacturing Intern**, Bharat Heavy Electricals Limited, Hyderabad, India.
- Completed industrial training in turbines and compressors - production department.

Master's Thesis / Research Project

Title *Continuum mechanics based modelling of material deformation*

Supervisors Dr Abhijit Ghosh, Dr Saikat Sarkar
Microstructure and Texture Engineering Laboratory, Dept. of MEMS, IIT Indore.

Duration Jul '21 - Jun '22

Description
- The effect of crystallographic anisotropy and orientation on the formation of shear bands during ductile fracture is studied in Fe single crystals using a phase-field damage model.
- Explored the modelling of shear band formation through crystal plasticity modelling in DAMASK.

Bachelor's Thesis / Projects

Title *Design and development of an ornithopter using Autodesk Inventor*

Supervisor Dr K Prasanna Lakshmi, Dept. of Mechanical Engineering, JNTUHCEM.

Duration Jan '16 - May '16

Description
- Developed a 3D CAD model of the concept design of an RC ornithopter using Autodesk Inventor.

Title *Design and fabrication of pedal powered multiple machining machine*

Supervisor Dr K Prasanna Lakshmi, Dept. of Mechanical Engineering, JNTUHCEM.

Duration Jul '15 - Dec '15

Description
- Designed and fabricated a pedal-powered machine that can do drilling, cutting and grinding simultaneously.

Technical Skills

Programming MATLAB, julia, Fortran, python

CAD AutoCAD, Autodesk Inventor Professional, Fusion 360, Catia

CAE Ansys, Abaqus, DAMASK, Gmsh

Other MS-Excel (Office), LaTeX, ParaView, git

Awards & Achievements

2020 Secured an **All-India-Rank of 7549** in GATE 2020 - Mechanical Engineering amongst 1,37,826 candidates.

2014 Participated in the final round of "All India Aerotrix Super Challenge" competition organized by AerotriX in association with "Conscientia-14" at IIST Trivandrum.