Sundar Gurumurthy

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WORK EXPERIENCE

Research Assistant **Jun 2024 – Present**

Welding and Additive Manufacturing Centre, Cranfield University

- Developed FE models for WAAM processes (CW-MIG, PTA) to optimize microstructure and reduce defects.
- Designed efficient deposition sequences for complex parts using fast thermo-mechanical solvers.
- Integrated martensitic transformation effects into dissimilar metal deposition models.
- Carried out WAAM experiments and characterization using SEM, thermal imaging, and 3D scanning.

Graduate Engineering Trainee **Jul 2021 – Jul 2022**

Sona Comstar, Gurugram, India

- Designed and optimized forged drivetrain gears using Bezier surface tools.
- Conducted LTCA and NVH studies for major automotive OEMs.
- Collaborated with cross-functional teams to improve gear manufacturability.

Student Trainee – Crash Structures **Feb 2021 – Jun 2021**

Mercedes-Benz R&D India, Bangalore, India

- Built non-linear FE models for tire crash simulations using LS-Dyna.
- Evaluated air pressure modeling and contact algorithms in tire simulations.
- Proposed a verification test plan for composite material models.

EDUCATION

Cranfield University **Jan 2023 – Oct 2024**

MSc by Research in Manufacturing
Thesis: *Understanding and Improving the Inherent Strain Method for Mechanical Analysis of WAAM*
Supervisors: Dr Yongle Sun and Dr Pradeeptta Taraphdar

- Conducted FE simulations to understand strain evolution during WAAM.
- Enhanced the Inherent Strain Method to better predict distortion and residual stress.
- Designed and executed experimental validations using 3D scanning and stress measurements.
- Affiliated with the NEWAM project focused on Ti6Al4V aerospace components.

Birla Institute of Technology and Science (BITS), Pilani **Aug 2017 – Jun 2021**

B.E. Mechanical Engineering, First Class
CGPA: 7.71 / 10

TECHNICAL SKILLS

Programming: Python, MATLAB, C/C++, FORTRAN, BASH
Simulation: ABAQUS, LS-Dyna, NASTRAN
CAD & Design: Siemens NX, CATIA V5, Fusion 360, Solid Edge

Experimental Methods: XRD, EBSD, 3D Laser Scanning, Thermal Imaging
Domains: WAAM, FEA, Residual Stress Modeling, Crash Simulation

PUBLICATIONS

Full list available at: sundargurumurthy.com/publications

AWARDS

– **AIAA/USU SmallSat Travel Award**: Sponsored by Blue Origin to present research at the SmallSat conference.

REFERENCES

Dr. Yongle Sun
Lecturer, Cranfield University
Yongle.Sun@cranfield.ac.uk

Dr. Pradeeptta Taraphdar
Manufacutring Research Engineer, Jaguar Land Rover
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All data in this document is true to the best of my knowledge as of June 16, 2025.