

Rajesh Nakka, PhD student.

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Education

- 2018 — 2023 📖 **Ph.D., Indian Institute of Science** in Aerospace Structures.
Thesis title: *Predicting the multi-physical properties of fibre-reinforced composites using deep learning.*
- 2012 — 2014 📖 **M.Tech. Mechanical Engineering, IIT Bombay** in Machine Design.
Thesis title: *Finite Element Simulation of Bulk Wave Propagation in Non Linear Solids.*
- 2008 — 2012 📖 **B.Tech. Mechanical Engineering, JNUH College of Engineering, Hyderabad.**

Employment History

- 2015 – 2016 📖 **Assistant Professor** at Bapatla Engineering College, India.
- 2014 – 2015 📖 **PGET Post Graduate Engineer Trainee** at Mahindra Research Valley, Mahindra & Mahindra, Chennai, India.

Research Publications

- 1 (Under Review) **Rajesh Nakka** et al. "Influence of fibre cross-section profile on the multi-physical properties of uni-directional composites". In: *Composite Structures* (Apr. 2023).
- 2 **Rajesh Nakka**, Dineshkumar Harursampath, and Sathiskumar A Ponnusami. "A generalised deep learning-based surrogate model for homogenisation utilising material property encoding and physics-based bounds". In: *Scientific Reports* 13.1 (June 2023). 📄 DOI: 10.1038/s41598-023-34823-3.
- 3 **Rajesh Nakka** et al. "A computationally efficient approach for generating RVEs of various inclusion/fibre shapes". In: *Composite Structures* 291 (July 2022), p. 115560. 📄 DOI: 10.1016/j.compstruct.2022.115560.

Skills

Coding	📖 Python (4/5), Julia (4/5), \LaTeX (4/5), Git (3/5), ...
Deep learning Frameworks	📖 PyTorch, Tensorflow
Languages	📖 English, Telugu and Hindi.
Misc.	📖 gmsht, FreeCAD, Asymptote: The Vector Graphics Language,

References

- Dr. Dineshkumar Harursampath 📖 Head, NMCAD Laboratory, Department of Aerospace Engineering, Indian Institute of Science, Bengaluru, Karnataka, India.
- Dr. Sathiskumar A Ponnusami 📖 Aeronautics and Aerospace Research Centre, Department of Engineering, City, University of London, Northampton Square, London, United Kingdom.