Mayank Raj

Contact Information

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Education

California Institute of Technology — Pasadena, CA, USA
Ph.D. in Applied and Computational Mathematics — 2022 – 2027
- ❑ Advisor: Prof. Andrew M. Stuart
- ❑ GPA: 4.1/4.0

Indian Insitute of Technology Madras — Chennai, India
M.Tech. in Data Science — 2020 – 2021
B.Tech. in Mechanical Engineering — 2016 – 2020
- ❑ Minor in Applied Mathematics
- ❑ GPA: 9.28/10

Employment

Wells Fargo — Bangalore, India
Data Scientist — 2021 – 2022

Publications

A full list of publications on Google Scholar.

[4] Harkirat Singh, **Mayank Raj**, and Kaushik Bhattacharya. "Effective behavior of heterogeneous media governed by strain gradient elasticity". *Journal of the Mechanics and Physics of Solids* 212 (2026), p. 106583. ISSN: 0022-5096. DOI: https://doi.org/10.1016/j.jmps.2026.106583.

[3] **Mayank Raj**, Pramod Kumbhar, and Ratna Kumar Annabattula. "Physics-informed neural networks for solving thermo-mechanics problems of functionally graded material" (2022). arXiv: 2111.10751 [cs.CE].

[2] **Mayank Raj** et al. "Estimation of Local Strain Fields in Two-Phase Elastic Composite Materials Using UNet-Based Deep Learning". *Integrating Materials and Manufacturing Innovation* 10.3 (Sept. 1, 2021), pp. 444–460. DOI: 10.1007/s40192-021-00227-2.

[1] **Mayank Raj**, Sandeep P. Patil, and Bernd Markert. "Mechanical Properties of Nacre-Like Composites: A Bottom-Up Approach". *Journal of Composites Science* 4.2 (2020). ISSN: 2504-477X. DOI: 10.3390/jcs4020035.

Awards & Achievements

- ❑ Mitacs Globalink Scholarship — 2020
- ❑ UGC-DAAD Research Scholarship — 2019
- ❑ Top 0.15% in JEE-Advanced — 2016

Relevent Coursework

- ❑ Linear Algebra
- ❑ Probability, Statistics & Stochastic Processes
- ❑ Multiscale Modeling
- ❑ Deep Learning

Tools

Proficient: Python, LaTeX
Familiar: C++, Bash

References

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