Raghavendra Dheeraj Peddinti

PERSONAL INFORMATION

rdheerajp@gmail.com | Google Scholar | Citizenship: Indian

EDUCATION

M.Sc., Computational Science and Engineering **Sept 2021 - Feb 2025**
Department of Mathematics, ETH Zürich, Switzerland
- Thesis Advisors: Prof. Dr. Leandro Aolita; Prof. Dr. Juan Carrasquilla
- Thesis Title: *Tensor network framework for computational fluid dynamics*

B.Tech. (Honors), Mechanical Engineering **July 2017- May 2021**
School of Mechanical Sciences, IIT Bhubaneswar, India
- Thesis Advisor: Prof. Dr. Satyanarayan Panigrahi
- Thesis Title: *Computational analysis of acoustic meta-materials*

EXPERIENCE

Researcher, Technology Innovation Institute (TII), Abu Dhabi, UAE **June 2025–Present**

Associate Researcher, TII Abu Dhabi, UAE **Sept 2023–June 2025**

Research Internship, TII Abu Dhabi, UAE **Sept 2022–Feb 2023**

Data Analyst, ZS Associates, Bangalore, India (Remote) **June 2021–Aug 2021**

Summer Research Fellow, IISc Bangalore, India **May 2020–Aug 2020**

RESEARCH STATEMENT

I am trained in *computational sciences*, at the intersection of mathematics, physics and informatics. My existing work belongs to the fields of *applied mathematics, quantum physics* and *numerical methods* but I try to be ever curious and exist at the crossroads of varied disciplines.

PUBLICATIONS

1. Farias, R. M., **P, R. D.**, Roth, I. & Aolita, L. Robust ultra-shallow shadows. *Quantum Science and Technology* **10,** 025044 (2025).
2. **P, R. D.**, Pisoni, S., Tiunov, E., Marini, A. & Aolita, L. Technical report on a quantum-inspired solver for simulating compressible flows. *arXiv preprint arXiv:2506.03833* (2025).
3. Pisoni, S., **P, R. D.**, Tiunov, E., Guzman, S. E. & Aolita, L. Compression, simulation, and synthesis of turbulent flows with tensor trains. *arXiv preprint arXiv:2506.05477* (2025).
4. **P, R. D.** *et al.* Quantum-inspired framework for computational fluid dynamics. *Communications Physics* **7,** 135 (2024).

RESEARCH ACTIVITIES

Conferences and workshops

Challenges in Simulating Quantum Matter (CSQM) **June 2025**
Pauli Center Workshop, ETH Zürich, Switzerland

8th Quantum Techniques in Machine Learning **Nov 2024**
University of Melbourne, Australia

Quantum Information Processing 2024 **Jan 2024**
Taipei, Taiwan

7th Quantum Techniques in Machine Learning **Nov 2023**
CERN Geneva

Peer review

Reviewed for TQC 2025, QTML 2025.

Computer Skills Proficient in Python, Julia, C++, LaTeX. Experience with `slurm` and HPC environments. Trained in CUDA and MPI/OpenMP.

Honors and Awards

Mentorship by INAE Fellow, Indian National Academy of Engineering **2020**
One among 60 selections across Indian engineering students

All India Rank 938, Joint Entrance Examination (Mains) **2017**
Top 1000 among 1.1 million participants

All India Rank 4524, Joint Entrance Examination (Advanced) **2017**
Top 5000 among 220K qualified participants

Competitions

CANSAT **2020**
A global aeronautical design and build competition organized by AAS and NASA.

IICDC **2018**
A national innovation and design contest across India to pitch business cases.

Languages English; Hindi; Telugu (native)

References Available on request.