Tanvir Mahmud Saurav

Building 26, Room 108
UNSW Canberra at ADFA

t.saurav@adfa.edu.au
Phone: +61 490 915 421

Education

UNSW Canberra
Ph.D., Mathematics & Statistics, 2026 (expected).
Fields: Spectral Element Method, Large–Eddy Simulation, Bushfire

The University of Melbourne
M.Phil., Mechanical Engineering, 2021.
Fields: Turbulence, Computational Fluid Dynamics, Heat Transfer
Grade: 91/100, H1 (Outstanding First Class Honours)

Temple University
B.S., Mechanical Engineering, *magna cum laude*, 2018.
GPA: 3.72/4.00

Research

Modelling ember storms at the wildland-urban interface
The aim of this project is to improve the current state of ember modelling to capture near-ground entrainment and relofting by analysing and adapting existing particle transport models and applying them to model ember storms using large-eddy simulation (LES) in `Nek5000`, a popular spectral element solver.

Experience

The University of Melbourne
Postgraduate Research Student
Fluids Research Group, 2018 – 2020.
- Developed roughness models using volume of fluid
- Utilized HPC clusters to perform direct numerical simulation
- Postprocessed and analysed DNS data

Temple University
Undergraduate Research Assistant
Materials Genomics Laboratory, 2015 – 2017.
- Prepared multiferroic samples for data collection
- Maintained VSM and strain measurement systems
- Compiled and analysed magnetostriction data

Temple University
Undergraduate Research Assistant
LISTEN Laboratory, 2016.
- Designed MEMS microphone mounts in SolidWorks for 3D printing
- Simulated acoustic response in COMSOL Acoustics Module
- Constructed LabVIEW programs for data collection and analysis

Teaching

Temple University
Undergraduate Teaching Assistant
Introduction to Engineering – ENGR 1101, 2016.

Scholarships

University International Postgraduate Award
UNSW Canberra, 2022 – Present.

Melbourne Research Scholarship
The University of Melbourne, 2018 – 2020.

Presidential Scholarship
Temple University, 2014 – 2018.

Honors Merit Scholarship
Temple University, 2014 – 2018.

Skills

Nek5000, Gmsh, MATLAB, Python, C/C++, LaTeX, Linux

Publications

Saurav, T. M. (2020). *Effect of solidity on momentum and heat transfer of rough-wall turbulent flows* [Masters Research Thesis, The University of Melbourne]. Minerva Access.
http://hdl.handle.net/11343/267999

Saurav, T. M., Forst, M. L., Boligitz, J. A., & Chopra, H. D. (2017). Contracting non-Joulian magnets. *Physical Review B, 95*(17), 174425.
https://doi.org/10.1103/PhysRevB.95.174425