

Dr. Darshan Rathod

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EDUCATION

- Indian Institute of Science** Bengaluru, India
PhD + M.Tech (Res), ICER; GPA: 8.6
Advisors: Prof. Saptarshi Basu, Dr. Pratikash Panda
Thesis title: Design and diagnostics of gas turbine combustors: from high shear injector to full-scale sector of annular combustor
2018 - 2024
- Sardar Vallabhbhai National Institute of Technology** Surat, India
Bachelor of Technology - Mechanical Engineering; GPA: 8.7
2012 - 2016

FELLOWSHIPS & AWARDS

- Fujitsu Grand Award** Fujitsu, Bengaluru
As a team, developed a method for improving the safeguarding of an LLM
Jun-2025
- PMRF** IISc, Bengaluru
Awarded the prestigious Prime Minister Research Fellowship
2018-2023

EXPERIENCE

- Fujitsu Research of India Pvt. Ltd.** Bengaluru, India
Senior Researcher
Aug 2024 - Present
 - Developed a gradient based methods to improve the defense of LLM against adversarial attacks. Methods reduces the ASR from 80~90% to ~10%.
 - Worked on Knowledge graph based prompt creation to augment red-teaming
 - Endurance testing of a specific part or system of vehicle. Specifications testing for new suppliers.
 - Characterization of competitors vehicle and engine, Accounting of production errors in development of engine; Market survey for customer feedback on applied vehicle development.
- Honda R & D India Pvt. Ltd.** Gurugram, India
Research Engineer
July 2016 - July 2018
 - Development and testing of IC engine for BS-IV emission norms with optimizing driveability and mileage. Optimizing the fuel supply system with consideration of diverse Indian environment.
 - Development of race engine specific power (kW/kg).
 - Endurance testing of a specific part or system of vehicle. Specifications testing for new suppliers.
 - Characterization of competitors vehicle and engine, Accounting of production errors in development of engine; Market survey for customer feedback on applied vehicle development.
- Schneider Electric** Vadodara, India
Intern
May 2015 - June 2015
 - Parts and tools storage system was manufactured for improvement in ergonomics of production line staff. Setup was compact and could sustain the high loads of tools and parts.
- Thermal Power Station** Jamnagar, India
Intern
December 2015
 - Understanding the basic functioning of thermal power plant & various sub sections of plant like boiler, turbine, cooling tower etc.

PUBLICATIONS

- Darshan D. Rathod, Samprada S. Kumbhare, Swetaprovo Chaudhuri, Pratikash Panda, Saptarshi Basu and Dalton Maurya. "Design of an optically accessible single cup sector of a full-scale annular gas turbine combustor," AIAA 2023-1062. AIAA SCITECH 2023 Forum. January 2023. <https://doi.org/10.2514/6.2023-1062>
- Darshan D. Rathod, Pratikash Panda and Saptarshi Basu. Flow diagnostics in real scale sector of modern annular gas turbine combustor at high Pressures. NAPC 2022, IIT Bombay.
- Kumar S., Rathod D., & Basu S. (2022). Experimental investigation of performance of high-shear atomizer with discrete radial-jet fuel nozzle: Mean and dynamic characteristics. Flow, 2, E31. doi:10.1017/flo.2022.25

PROJECTS

- Development of Python GUI for experiment control system** Tkinter python code developed for control and data acquisition from NI DAQ. Code integrates various hardware like NI cDAQ-9174, ALICAT mass flow controller, arduino and mobile camera for controlling and data acquisition of experiment.
- Design and manufacturing of setup for visualization of wave motion phenomena** Two bodies which are in-phase, out-of-phase or in resonance can be demonstrated using the setup.

SKILLS

- **Designing Software** : Solidworks, CATIA
- **Programming Languages** : Python, MATLAB
- **Soft Skills** : Team Management, Resource & Inventory Management
- **Tools** : matplotlib for plotting, scikit-learn for ML, numpy and pandas for data processing, Tkinter for GUI development, cantera for gas properties calculations
- **Experimental Skills** : Particle Image Velocimetry (PIV), Stereo-PIV, Shadowgraphy, Handling High Speed cameras and Lasers