

HARISH JAYARAJ P

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ACADEMIC QUALIFICATION

- **Bachelor of Engineering, Mechanical Engineering** CGPA: 8.63/10
Rajalakshmi Engineering College (REC), Anna University - Chennai (2020-2024)
★ Awarded the **Best Outgoing Student of the Department** for the **Batch 2020-2024**

Areas of Interest

- Scientific Computing & Mathematical Modelling, Data Science, AI/ML, Python Desktop Software Development

PROFESSIONAL EXPERIENCE

- **NovaCast India Pvt. Ltd. /CFD Software Development Engineer** April 2025-Present
 - Development of CFD Software for casting simulations
 - Development of SaaS based CFD Software for casting simulations
 - **Skills:** C++, Python Scripting/Automation, ParaView, Linux, React, GPU Rendering, VTK, Git, CI/CD
- **Experiqs, IIT B - SINE /Research Assistant Engineer - Scientific Computing** Jun 2024-April 2025
 - Development of Drones, Turbine for data center heat recovery, software for kiln alignment.
 - Developing and validating CFD models to optimise product design and performance
 - **Skills:** C++, Python, OpenFOAM, ANSYS Fluent (HPC), Cadence, MATLAB, Machine Learning, PyQt

INTERNSHIP/RESEARCH EXPERIENCES

- **Indian Institute of Technology, Bombay (IIT-B) /CFD Research Assistant** Jan 2024-May 2024
 - Carrying out various research activities in FOSSEE-CFD Lab, conducting tutorials, workshops for CFD using OpenFOAM and supporting lab works.
 - **Skills:** C++, Python, OpenFOAM, ANSYS, ParaView, Structured Meshing, Linux, CAD Modelling, PyQt
- **Indian Institute of Information Technology, Design & Manufacturing (IIITDM-K) Vandalur, Chennai /Research & Design Intern** Jan 2023-Aug 2023
 - Research and development of Transvaginal optical imaging probe for cervical cancer diagnosis
 - **Skills:** Biological Research, Solidworks, 3D printing
- **Indian Institute of Technology, Bombay (IIT-B) /CFD Research Fellow** May 2023-July 2023
 - To study heat transfer rates in Straight Tube, Coiled Flow and Coiled Flow Inverter Microreactor geometries under Heating and Cooling Conditions
 - **Skills:** OpenFOAM, ParaView, Structured Meshing, Fluent Meshing, SolidWorks, Linux, LaTeX
- **Atum Robotics, (Anna Univ. Incubated) Guindy, Chennai /Design Intern** May 2022-Aug 2022
 - Designed body parts, various mechanisms & worked on 3D printing & manually assembling an interactive robot
 - **Skills:** Solidworks, Laser-cutting, 3D-printing, Mechanical Workshop tools
- **Advanced Manufacturing Technology Development Centre (AMTDC)-Ministry of Heavy Industries (MHI), IIT-Madras-Research Park, Chennai /Research Intern** Apr 2022-July 2022
 - R&D of single-stage Harmonic gearbox for given specifications for Industrial robotic applications
 - **Skills:** Solidworks, Engineering Design Calculations, Python, Manufacturing techniques

TECHNICAL SKILLS

- **AIML, Programming & Scientific Computing:** Python, C++, MATLAB, Octave
- **Software Development:** Version control, MySQL, DBMS, CI/CD, PyQt, MPI, VTK (3D Renderer)
- **CFD: Ansys:** Fluent, CFX, Fluent Meshing, CFD Post, OpenFOAM, Cadence Mdlng, Paraview PostProc.
- **CAD & 3D Modelling:** AutoCAD, SolidWorks, CatiaV5, **Blender** (Modeling & Animation), FreeCAD

PROJECTS

- **Design and Development of a bladeless air multiplier as an exhaust fan in a household kitchen**
Bladeless exhaust fan for better cleaning, quieter and autonomous operation. (Fabricated & Design patent granted)
- **Design and Development of Hydro Turbines based on Archimedean Spiral geometry (UG Final thesis)**
Design & development of a hydro turbine inspired from the Archimedean spiral (ISRO Conference Presentation)

PRESENTATIONS AND CONFERENCES

- **International Conference on Advances in Aerospace and Energy Systems (IAES)** Apr 2024
 - **Paper title:** CFD Analysis Of An Archimedean Spiral - Inspired Hydro Turbine
- **HOWTOCFD - 5 Days Hands-on-Workshop at IIT-Hyderabad (National Supercomputing Mission)** Jun 2023
- **Indo-German Computational Mathematics (IGCM 23) Conference (IISc, Bangalore)** Mar 2023
- **IISc, Bangalore-OSSAN'22 OpenScience Ideathon - Winner (South Asia)** Feb 2023
 - **Paper title:** Open source differential equations solver package

PATENTS

- **Convertible Wheelchair To Stretcher With Health Tracker** Design Patent Jun 2024
- **Pedal Pressed Water Clog Removal System in Sink** Design Patent Mar 2024
- **Powerless Low Friction Treadmill** Design Patent Oct 2023
- **Bladeless Exhaust Fan for Domestic Applications** Design Patent Jan 2024
- **Coffee Bean Harvester** Design Patent Feb 2024

AWARDS AND ACHIEVEMENTS

- **Emerging Talent In OpenSource - FOSSEE - IIT-Bombay** Honorary Award Sep 2025
- **GATE'24 - Engineering Sciences (XE) - (84%ile)** AIR 1779 Apr 2024
- **AICTE IIC Yukti'23** Finalist Mar 2024
- **IISc, Bangalore-OSSAN'22 OpenScience Ideathon** South Asia - Winner Feb 2023
- **Mechanical Department- Innovative Project Cell** Winner & Runner Mar 2023
- **Best innovative project- Enactus Races- Plastic Waste Management** AIR 44 Jun 2022
- **Prof. V.N. Srinivasan Memorial Award- Innovative Project Cell** 2nd Runner May 2022
- **Mechanical Department Topper** 3rd topper - 8.95 GPA May 2022

TECHNICAL CERTIFICATIONS

- Deep Learning Specialization (**5 courses**) Deeplearning.AI Mar 2025
- Machine Learning Specialization (**3 courses**) Stanford University Jan 2025
- Meta Database Engineer (Professional Certificate with **9 Courses**) Meta Dec 2024
- Beginning C++ Programming - From Beginner to Beyond Udemy Jul 2024
- Learning for a Sustainable Future University of Edinburgh Dec 2023
- Applied Numerical Methods IIT-Kanpur Nov 2023
- CFD Foundation course FlowThermoLab May 2023
- Introduction to CFD IIT-Kharagpur Nov 2022
- Foundation of Computational Fluid Dynamics IIT-Madras Oct 2022
- Product Design and Manufacturing (**Elite Silver**) IIT-Kanpur May 2022
- Modelling and Simulation of Dynamic Systems IIT-Roorkee Apr 2022
- Introduction to Research IIT-Madras Nov 2021
- Robotics (**Elite**) IIT-Kharagpur Oct 2021
- MATLAB-Onramp MathWorks Jul 2021
- Philosophy of the Physical Sciences University of Edinburgh Jul 2020
- Certified SolidWorks Associate (CSWA) Dassault Systemes

LANGUAGES

Tamil - Native | English - Proficient | Hindi - Conversational | German - Basic