

# 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