

HARISH THANGARAJ

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OBJECTIVE

A highly driven aspirant focused on pursuing master's in computer science to leverage academic research and contribute to the artificial intelligence and machine learning domains in later work as an AI researcher/engineer.

ACADEMIC QUALIFICATION

Bachelor of Technology, Computer Science, Vellore Institute of Technology, Chennai

CGPA: 7.81/10
Aug 2021 - July 2025

ACADEMIC PROJECTS

VITBot – A custom trained interactive chatbot

Jul 2024 – Sep 2024

Team size: 3

Role: Lead developer

- Trained an **RPA**-based conversational chatbot on Vellore Institute of Technology's knowledge base to allow its stakeholders to query academic guidelines, rules, regulations, and information on events and clubs.
- Rasa's intent-response framework, along with **Meta Llama** tuning for contextual understanding, was implemented using data scraped from the university's guideline documents and website using **UiPath**.
- The chatbot is undergoing final testing to be deployed as a **campus automation project by November 2024** with the future scope of extending it to multiple languages.

FindMate – An academic recommendation system

Dec 2023 – Aug 2024

Team size: 4

Role: First author

- Researched and developed an innovative profile recommendation system focused on connecting like-minded individuals for academic collaboration within a university environment.
- The model leverages **Natural Language Processing, TF-IDF, and BERT** techniques deployed as a mobile application for on-the-go usage.
- **The research paper is set to be presented in the International Conference on Intelligent Systems and Security (ICISS - 24), followed by a Springer publication.**

SinSmart – A hand – sign-based home automation tool

Feb 2024 – Apr 2024

Team size: 4

Role: Lead developer

- Explored and constructed a custom hand-sign controlled home automation tool built using **MobilNetV2, Mediapipe, and OpenCV**.
- The end-to-end pipeline involved the creation and annotation of a unique dataset, model training, and deployment on a Raspberry Pi controller, enabling wireless control of home devices.
- The fully functional prototype resulted in a **96%** tagging accuracy promising one of a kind IoT tool for differently abled individuals and convenience.

Navbot– A gesture-controlled robot

Jan 2024 – Apr 2024

- Built a gesture-controlled robot featuring 3D navigation and pick and place operations using **ROS, Gazebo, and OpenCV**.
- The development cycle consisted of defining **URDF** for accurate design, **RVIZ** for visualization, and designing a dynamic simulation environment.

- The robot was simulated, offering controlled navigation without major bugs or failures.

Suraksha – A police personnel tracker
Team size: 5

Oct 2022 – Nov 2022
Role: Core developer

- Engineered a police personnel tracking tool in real-time using GPS and tagging.
- The system is designed for practical use, employing **Face recognition** and **Geolocation** to tag officers and alert boundary violations. The data can be conveniently viewed and analyzed on a website built using **Firebase** and **ReactJS**.
- This project received a special mention in the **Kavach regional-level cyber security hackathon**, which was presided over by the police department of Chennai.

EXPERIENCE

AI engineer – Liquid Neurons Private Limited

Feb 2024 – Present

- Implemented a mass attendance monitoring system for a primary school using computer vision paradigms that can tag **20+** faces within a single frame. Optimized, containerized, and deployed the API on our server using **Gunicorn WSGI**.
- Developed an object counting algorithm that uses a **YOLOv8** architecture to detect, count and tally invoices in an industrial inventory. The application is functional in **2** industries for smart inventory management.
- Set up **Nginx** with reverse proxy configuration on the company's **Linux-based** server to achieve load balancing, concurrency and security.
- Built an **ERP** software for small scale educational institutions using **ReactJs**, **Flask backend** and **SQL database** to manage student - employee information.

Research Intern – University of Pretoria

Jan 2024 – Oct 2024

- Researched enhancements on **multilingual NLP** models for low-resource African languages utilized by **165+** users.
- Benchmarked cross-lingual and cross-domain transfer scenarios for multilingual and neural architectures.
- Experimented with various **regularization based continual learning paradigms** to tackle forgetting during fine tuning of the models.
- **The paper based on the findings is set to be presented in the International Conference On Computational Linguistics (COLING - 25).**

Founder and developer – Vialux Nomad Travel Solutions Private Limited

Oct 2023 – Present

- A travel recommendation system with **15000 USD** credit funding under the Microsoft for start-ups program focusing on connecting like-minded travelers with AI trip recommendations.
- Integrated a P2P and group chat functionality into the application using **Azure's communication services API**. Designed the company's landing and admin website using the **MERN** stack for marketing and user data analysis, respectively.
- **Hired and managed** interns across various departments working towards developing the MVP.

MERN Intern - Ethnus

Aug 2023 – Nov 2023

- Completed **80+** hours of intensive training in MongoDB, ExpressJs, ReactJs and NodeJs.
- Developed a customer support ticketing system leveraging the **MERN stack** to manage custom support tickets efficiently, including features such as ticket creation, assignment, status tracking, and automated email notifications.

- Integrated **role-based access control (RBAC)** for administrators, agents, and customers to ensure secure and streamlined ticket management.

User research Intern - Knowledge Ark Technologies

Nov 2021 – Sep 2022

- Led a team of **10** members to beta test a student learning mobile application and implemented **SDLC** methodologies.
- Carried out user research and validation for a user base **100** by analyzing feedback, framing problem statements, and documenting findings and solutions.

CERTIFICATIONS

• A-Z Hands – On Tableau Training for Data Science – SuperDataScience	Feb 2024
• Data Science for Engineers – IIT, Madras	Dec 2023
• AI/ML Externship – Smartinternz	Nov 2023
• Introduction to Internet of Things – IIT, Madras	May 2023
• Data Analysis using Python – IBM	Sep 2022
• Web design and development – Systems domain	Sep 2022
• Python programming using AI, ML and DL – NIT, Warangal	Nov 2021
• Automobile design mentorship	Sep 2020

ACHIEVEMENTS

• Distinction Grade 2 in Electronic keyboard – University of West London (LCM)	Dec 2015
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LEADERSHIP AND VOLUNTEERING

ML and Fundraising volunteer – Suvidha foundation (Remote)

Feb 2024 – Mar 2024

- Raised funds for education for underprivileged children.
- Developed a sentiment analysis model for the organization's feedback and reviews

Web Development Lead – IEEE RAS student chapter (VIT, Chennai)

Dec 2022 – Nov 2023

- Lead a proactive 60-member team of web developers contributing to various IEEE organized events and projects. Interviewed and recruited members from over 600 applicants.