HARIHARA SUDHAN R

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PROFILE

- Highly motivated and results-driven Computer Science graduate with expertise in **AI/ML**, **Deep Learning**, and **Full-Stack Software Development**.
- Built and deployed end-to-end solutions including **LLM-based DeFi agents**, **Attention U-Net for medical imaging**, and **web apps using React, Node.js, and Python**.
- Passionate about solving complex problems, driving innovation, and contributing to impactful, real-world projects across **healthcare**, **finance**, and **crypto** domains.
- Committed to leveraging technology for positive change, fostering inclusive communities, and continuously learning in dynamic tech environments.

EDUCATION

Bachelor of Engineering - BE, Computer Science | **8.15 / 10** 11/2022 – present
Anna University, Chennai

Class 12th | **GPA : 9.15 / 10** 06/2021 – 05/2022
Mount Zion Matriculation Higher Secondary School

Class 10th | **GPA : 8.78 / 10** 06/2019 – 05/2020
Mount Zion Matriculation Higher Secondary School

PROFESSIONAL EXPERIENCE

AI Engineer Intern 01/2025 – 06/2025
Ionic Protocol
- Developed a **multi-router LLM-based DeFi agent**, reducing **inference latency by 30%** and increasing **throughput by 25%**.
- Built a **scalable RAG pipeline** supporting **500+ queries/min**, cutting **response time by 40%**.
- Implemented **sparse context selection** and **caching**, achieving a **4x reduction in time-to-first-token**.
- Designed a **multi-agent orchestration layer**, lowering **server resource usage by 20%**.
- Led the integration of an **image analysis module** for automated feature detection and classification in unstructured visual data.
- Developed robust **error handling and fallback systems** across LLM and image pipelines, ensuring **high system reliability** and graceful degradation under load.

Research Intern 06/2024 – 08/2024
National Institute of Technology, Tiruchirappalli
- Title : Deep learning based Tumor Classification and Segmentation
- Developed a novel method utilizing Attention Gates in U-Net architecture to enhance classification accuracy and segmentation quality.
- Improved model interpretability by integrating Grad-CAM for explainable AI insights.
- Authored a research paper detailing the methodology and findings of the study.

AI Engineer Intern 11/2024 – 12/2024
Intern-Hub11
- Developed AI models leveraging intelligent agents for real-world applications.
- Gained hands-on experience in AI concepts, problem-solving, and optimization.
- Enhanced skills in AI development and implementation through practical projects.

Campus Ambassador 09/2024 – 11/2024
GirlScript Summer of Code
- Promoted the program and increased participation through outreach and events.
- Organized workshops and mentorship sessions to foster learning.
- Advocated for open-source contributions and diversity in tech.

PROJECTS

SBI LifeSmart: AI-Powered Virtual Insurance Assistant 12/2024 – 06/2025

- Developed an AI-based virtual assistant for SBI Life Insurance using **LLMs (GPT, AI Studio)** to automate policy queries, document processing, and KYC verification.
- Integrated **multi-modal input**, real-time document analysis, and a **scalable backend** with caching and fallback mechanisms, reducing response time by **40%**.
- Focused on improving **insurance accessibility and automation** during a national-level hackathon.

Intrusion Detection System for IEC-61850 Protocol in Substations 09/2024 – 10/2024

- Designed an intrusion detection system to detect ingress in substation networks using IEC-61850 protocol achieving95% detection accuracywith a FCNN classifier and GAN for anomaly detection.
- Reduced false positive rates by30%using SHAP values for model transparency.
- Implemented a React dashboard, Flask backend, and PostgreSQL database, supporting24/7 real-time monitoring.

Deep learning-based detection of tumors in Pancreatic MRIs 06/2024 – 08/2024

- Designed and implemented a **deep learning model using Attention U-Net** for precise **segmentation of pancreatic tumors** in MRI scans.
- Achieved **98% segmentation accuracy** on the **Medical Decathlon dataset**, placing the model within the **top 1% of published benchmarks**.
- Integrated **Grad-CAM** for explainable AI, significantly enhancing **clinical interpretability and trust** in over **80% of cases**.
- Applied advanced **preprocessing techniques**, including normalization and data augmentation, to ensure model robustness across varied imaging inputs.

Decentralized Crowdfunding DApp

- **Developed a Web3-based crowdfunding platform** using **React.js and Solidity** to enable secure and transparent fundraising.
- **Implemented Ethereum smart contracts** to manage fund collection, goal tracking, and withdrawal processes without intermediaries.
- **Integrated Metamask for user authentication** and secure transactions, ensuring decentralized and trustless contributions.
- **Deployed on a local Ethereum test network** using **Ganache**, enabling real-time tracking and verification of funds.

Fuzzy Name Matching with RAG Search for Police Records 11/2024 – 12/2024

- Developed a RAG-based search system achieving98% accuracyfor Hindi name variations (transliteration, spelling, phonetics).
- Combined fuzzy matching with a retrieval-augmented generation (RAG) model, increasing record retrieval speed by30%.
- Integrated with PostgreSQL for efficient storage and a FastAPI backend, handling 10,000+ real-time queries monthly for enhanced context-aware record retrieval.

UJAL – AI-Powered Support for Women in Abusive Situations

- Developed an AI-powered platform providing discreet SOS messaging using steganography, enabling women to seek help without raising suspicion.
- Built an AI mental health chatbot to offer confidential emotional support and coping strategies.
- Implemented a legal rights bot trained on Indian law to assist women with abuse cases and legal claims.
- Engineered a FastAPI backend with MongoDB, integrated React-based frontend, and ensured secure authentication using Clerk.

CERTIFICATES

• Advanced Learning Algorithms – DeepLearning.AI, Coursera, Stanford CPD, UV
Credential ID: 30CB3204GU3

• Computer Vision with Embedded Machine Learning – Edge Impul

• Supervised Machine Learning: Regression and Classification – DeepLearning.AI, Coursera, Stanford CPD, U
| Credential ID: 656HM9G5LW

• Introduction to Generative AI Studio – Simplilear

SKILLS

- Python
- Java
- C
- JavaScript
- TypeScript
- React.js
- Pytorch
- Keras
- TensorFlow
- XGBoost
- PostgreSQL
- MongoDB
- Docker
- Kubernetes
- HTML5 / CSS3 / JavaScript (ES6+)
- Wireframing & Prototyping (using Figma, Adobe XD, or Sketch)

AWARDS

Top Finalist – SBI Life Hack-AI-Thon 2025 13/06/2025
National-Level AI Hackathon, Mumbai – Organized by SBI Life Insurance
- Selected among the **top 16 teams nationwide** from hundreds of applicants.
- Built **SBI LifeSmart**, an AI-powered web assistant for policy queries, image-based document processing, and personalized recommendations.
- Recognized for **innovation, scalability, and domain relevance** in the insurance sector.

Third Place Winner – TOP CODERS'24 24/04/2024
Sudharsan Engineering College

3rd Runner-Up – IHNA Australia Hackathon 2024 15/04/2024
International Hackathon – Institute of Health and Nursing Australia (IHNA)
- Achieved **3rd place globally** among international participants.
- Developed a **pancreatic tumor detection model** using **Attention U-Net**, achieving **98% accuracy** on the **Medical Decathlon dataset**.
- Integrated **Grad-CAM** for explainability, improving **clinical trust in 80% of diagnostic cases**.
- Project recognized for its **high precision, transparency, and real-world medical application**.

Top 5 Finalist 10/10/2024
Power System Cybersecurity Hackathon 2024 (IIT Roorkee, WRDM)

LANGUAGES

- English ●●●●○
- Tamil ●●●●●
- Hindi ●○○○○
- Malayalam ●●○○○