


A S Aravinthakshan

P: +91 8754563674 — aravinthakshanmain@gmail.com — github.com/aravinthakshan  — linkedin.com/in/aravinthakshan **in**

Languages: Python, C, C++, Java, JavaScript, HTML, CSS, SQL.

Frameworks/Libraries: NumPy, Pandas, PyTorch, MongoDB, Express.js, React, Tailwind, Node.js, Git, Google Cloud, LangChain.

Certifications & Training: Machine Learning, Deep Learning, Natural Language Processing (DeepLearning.ai) Specialization, Python for Data Science Bootcamp, The Complete Web Developer Bootcamp (MERN), Version Control with Git.

EXPERIENCE

ProCodeBase Company

December 2024 (Present)

Machine Learning Engineer Intern

Remote, United States

- Wrote a REACT framework-based multi-agent system from scratch to capable of performing complete data analysis with minimal human intervention for large scale databases.
- Agents work on subgoal decomposition and Integrated Ollama's models with the Zep Memory Layers.

Samsung R&D Institute India

November 2024 (Present)

Prism AI Developer and Research Intern

Bengaluru, Karnataka

- Developing a web application with a Django backend, for hosting on a Linux server, utilizing XMem++ for multi-view image annotation and Video Object Segmentation, polygon-based segmentation, and detection.
- Working to expand it to interactive correction, based on a feed forward layer and a memory component.

Mars Rover Manipal Student Project

January 2024 (Present)

AI Researcher

Manipal, Karnataka

- Implemented deep learning and machine learning algorithms such as linear and logistic regression, SVM, GANs, clustering algorithms, and computational neural networks from scratch.(Benchmarked and trained on Kaggle, Google Colab).
- Working on a novel image denoising architecture designed based on a dual encoder, contrastive learning approach.

Larsen and Toubro Limited Company

June-July 2024

ML and NLP Intern

Chennai, Tamil Nadu

- Standardized construction activity codes in a master database utilizing the Gemini API, Google Cloud, and NLTK library.
- Incorporated a semantic search feature using embeddings in a Pinecone vector database, significantly reducing manual tagging time from 6 hours to just 15 minutes.

BugBase Company

Feb-May 2024


Founders Office Intern

Manipal, Karnataka


- Helped improved the automated Bug Triaging ML Model using an application of RAG(Retrieval-Augmented-Generation).

RESEARCH

Undergraduate Researcher at MIT Manipal

- **Co-authored a paper-** "AdaptPhishSysNet: Adaptive Phishing Detection System for Blockchains using Machine Learning" accepted and to be published at the Information Systems for Business Management Conference 2024.

Research Apprenticeship at Arizona State University

- Working on a research project in **Collaboration with Wu-Lab at Arizona State University** focused on prostate cancer stage classification using a random walk algorithm on a rule based network.

Research Apprentiship at Indian Statistical Institute

- Working on a paper-Focusing on designing a custom clustering algorithm that can be integrated with existing models for small object detection in wildlife monitoring using UAVs which are lightweight and modular.

Research Internship at Kharagpur Learning, Imaging Visualization (KLIV)

- Working on a paper-Related to Multimodal domain generalization for federated models in the medical domain

PROJECTS

Federated Learning based Recommendation System

Full Stack and Software Development

- Designed a federated learning recommendation system that allows multiple clients to train a recommendation model locally and remotely without centralizing sensitive information, uses Redis for caching and backend in Flask.
- Utilized TensorFlow Federated and PySyft for privacy-preserving model updates, aggregating user data across devices.

Activity Tracker

Full Stack and Software Development

- Developed an activity monitoring system that automatically categorize application usage and your system usage
- Implemented text similarity algorithms to group activities and tasks organization and find your peak productivity times.

Sentiment Analysis Model API

Machine Learning, Backend Development, NLP

- Engineered a sentiment analysis classifier hosted on Firebase with an API on Google Cloud, front end in React and Tailwind.
- Utilized FastAPI to connect a fine-tuned DistilBERT model on the Twitter dataset, achieving 92% accuracy.

EDUCATION

Manipal Institute of Technology Manipal, Karnataka

2023-2027

B.Tech in Computer Science and Engineering

CGPA:8.83/10.0

- Ranked 690th among 300,000 participants in the MET Entrance Exam
- **Achieved 1st and 2nd place in the national-level 'Moral Metrics' Data Analysis Hackathon** (160 participants) and 'Investigar' Paper Presentation (Computer Science Track, 180 participants) at MIT TechTatva 2024.

- Served as Class Representative in the Student Council for three consecutive semesters.

- **Relevant Courses:**Data Structures,Algorithms,Engineering Mathematics,Object Oriented Programming,Database Systems.

Maharishi Vidya Mandir Chennai, Tamil Nadu

2021-2023

All India Senior School Certificate Examination (AISSCE)

94.8%