Mohan Krishna G R

mohankrishnagr08@gmail.com | +91-9080696129 | LinkedIn | GitHub

Education

Sri Ramakrishna Engineering College
Master Of Technology, Computer Science & Engineering (5 Years Integrated) | CGPA: **9.16**/10
September 2022 – March 2027
Coimbatore, India

Experience

Trainee Software Engineer @ **SuperDNA 3D Lab**
January 2025 – Present
Hyderabad - Hybrid

AI/ML Intern @ Infosys Springboard
May 2024 – July 2024
Summer Internship
Remote

Projects

TextSumm | GitHub — Individual Project

- Defined and developed automated text summarization using **NLP** techniques, incorporating comprehensive research and data engineering, handled 5,64,562 records of data.
- Developed and fine-tuned **transformer** models, significantly improving summarization accuracy and efficiency, by 300% for ROUGE-2 F1-score. ROUGE-1 F1-Score stands at 61.32, which proves the benchmark grade for model.
- Developed a novel rule-based model for extractive text summarization by integrating **TF-IDF** and **KMeans** clustering.
- Utilized FastAPI to create **RESTfulAPI**; Implemented Extractor modules to support all file formats (txt, URLs, PDFs, and DOCX).
- Developed a simple interface using HTML, CSS, and JS (with jQuery) for dynamic interaction with the backend API endpoints.
- Developed fully automated and functional **CI/CD** pipeline using **GitHub Actions**, **Docker** and Azure.
- Containerized the app using Docker and deployed the container in **Azure ACI**, with a FQDN.

PyroGuardian | (Signed NDA with Honeywell) — Team Project

- Lead the multi-disciplinary team in developing an **UAV** for fire detection and mission critical operations.
- Designed and developed **Deep-Learning model** for **fire detection** and **severity classification** (calculates: Fire- spread rate, Hazardous material proximity, Nearby population, Proximity to assets), done **pruning** and **quantization**, converted to **TensorRT** model, optimized to run on the edge in **real-time**.
- Achieved 90% improvement in inference speed compared to the baseline model.
- Developed a program for **live streaming** annotated video from the edge to the app, addressing deployment challenges with **low-bandwidth networks**, resulting in a 20% reduction in downtime.
- Utilized **AWS SNS**, for event-triggered notification to the registered users, with RBAC, on fire detection with the severity score.
- Leveraged NVIDIA **Jetson Nano** with CUDA acceleration for on-board edge inference, enabling real-time GenAI-based decision-making under constrained computational resources.

Crop Schedule Management using Quantum Optimization Techniques | GitHub — Team Project

- Lead the research team, in designing and developing Quantum Optimizer for farming in the Indian sub-continent, under the guidance of Dr.R.Madhumathi and **CQuICC, IIT Madras**.
- Addressed agricultural **optimization** challenges, including yield disparities and inefficient resource utilization, by leveraging quantum computing for crop scheduling.
- Formulated and solved a **Quadratic Unconstrained Binary Optimization (QUBO)** model for crop scheduling with constraints like crop rotation, adjacency rules, and maximum field utilization.
- Utilized **Quantum Annealing** on **a D-Wave quantum computer** to compute optimal planting schedules dynamically.
- Achieved efficient and sustainable solutions in Quantum, reducing computational overhead compared to classical methods.
- Highlighted quantum computing's potential in addressing large-scale agricultural optimization challenges.

MindWave | GitHub — Team Project

- Lead the team in developing an **AI powered Mental Health Monitoring App.**
- Developed and deployed a **machine learning** model using Python, scikit-learn, and TensorFlow, achieving an accuracy score of over 94% in **stress level prediction**, contributing to improved user experience and mental health monitoring.
- Integrated the model into a Flutter mobile app for Android and iOS, facilitating **real-time** stress level assessment for users, resulting in improved mental health monitoring and engagement.
- Reduced server response time by 20% through **optimized model deployment** and API integration, enhancing app performance and responsiveness.

Technical Skills

Areas of Interest: AI/ML Engineering, MLOps, Full Stack Development, System Design.

Languages and Frameworks: C, C++, Python, Java, SQL (MySQL, SQLite, PostgreSQL), JavaScript, HTML5, CSS3, Flask, Django, FastAPI, MongoDB, PyTorch, TensorFlow, Keras, Flutter, Boto3, OpenCV, Hugging Face Transformers, Detectron2, ONNX.

Tools and Technologies: Git, Linux, Docker, Kubernetes, Firebase, Raspberry Pi, Jetson Nano, JetPack, Eclipse, Visual Studio, AWS SDK, AWS SageMaker, TensorRT, NVIDIA Triton, CUDA, cuDNN, Streamlit, Gradio.

Publications

A Indian Rainfall Prediction Using Machine Learning Algorithms: A Comparative Study | IEEE Xplore

- ➔ Developed and compared multiple machine learning models (SVM, Naive Bayes, KNN, Decision Trees) to predict Indian rainfall.
- ➔ Preprocessed large meteorological datasets, handling missing values, feature scaling, and categorical encoding.
- ➔ Evaluated models using precision, recall, F1-score, and accuracy, achieving up to 88% accuracy with SVM.
- ➔ Utilized Python (Pandas, Scikit-learn) for data analysis and model development.
- ➔ Contributed to more accurate rainfall prediction, aiding in applications for agriculture and disaster preparedness.

Hackathons

- ➔ **Runner-up** – **Honeywell** Drone Technologies Hackathon 2024. (INR **25,000**)
- ➔ **Overall Winner** – The Ultimate Hackathon 2023 – By: **CII** (Confederation of Indian Industries), **Yi YUVA**. (INR **25,000**)

Awards \ Extra-Curricular

- ➔ Sri. P. Ramaswamy Memorial Award – "**The Highest CGPA**" for A.Y. 2022-2023, A.Y. 2023-2024.
- ➔ **Student Innovation Ambassador of SREC**. (Selected as one among 7, out of 4400 plus students)
- ➔ Head, Blog Writers of SREC.
- ➔ Best Innovation Idea - @ InnoTech 2023 - SREC