GANGA RAMESH

togangaramesh@gmail.com +91 7867072316 https://about-ganga.pages.dev itsmeganga GANGAR

SUMMARY

A BTech student intensely mastering Full Stack development while advancing skills in Data Science and Machine learning. Demonstrating prowess in writing reusable, testable, and efficient code, integrating technical expertise, project management, and clear communication to deliver user-centric software solutions. Additionally, I am enhancing my skills in the domain of AI.

EDUCATION

Bachelor of Technology in Computer Science and Engineering — **8.64 CGPA**
Amrita University, Coimbatore, India (Sep2022 - Jun 2026)

Higher Secondary Education CBSE — **93.2 Percentage**
Chandrakanthi Public School, Coimbatore, India (Jun 2020 - Jun 2022)

WORK EXPERIENCE

Specialized Industrial Services Co. LTD. (SISCO)

APRIL 2025 -JUNE 2025
Jubail, Saudi Arabia

INTERN,ON-SITE

- Triaged and resolved high-priority production incidents, reducing Mean Time To Resolution (MTTR) for critical alerts by over 30%.
- Enhanced system stability by developing and deploying Python/Bash automation scripts for health checks, log analysis, and failure recovery.
- Boosted monitoring effectiveness by 40%+ by profiling system performance and optimizing alerting thresholds in tools like Splunk and Datadog.
- Orchestrated the migration of legacy monitoring scripts to a new centralized platform, improving maintainability and response time.
- Audited and interpreted application and system logs to diagnose the root cause of complex, intermittent production failures.
- Researched and presented feasibility studies on new automation tools, leading to the adoption of [e.g., Ansible] for configuration management.
- Reduced recurring weekly alerts by conducting deep-dive root cause analysis and collaborating with development teams on permanent fixes.

Research Experience

Deep Learning framework towards adaptive encryption switching in Edge systems

Developed ASCON and GIFT algorithms to protect edge devices from differential, integral, and cube attacks.
Dynamic RNN-Based Security
Designed a switching RNN model to adapt encryption techniques based on real-time threat analysis.
Optimized for Raspberry Pi, Deployed on edgedev

KEY PROJECTS

Sony-SSUP Embedded Dev

Developing an Edge-based Cyber-Physical System (CPS) for Smart Polyhouse Solar Drying, optimizing food product drying using solar energy and sensor technology. Using Spresense, stm,etc.
Working with ESP32,GSM, Daisy Seed 1.1 (Electrosmith) & SPRESENSE for real-time data acquisition, embedded system development, and IoT sensor network integration to enhance agricultural efficiency.
A smart agriculture monitoring system using Daisy Seed as the main controller with FreeRTOS for real-time multitasking. Integrated SHT21 sensors for environmental data, ESP32 for WiFi communication, and GSM modules for cellular backup to upload sensor logs and images via MQTT/FTP. Designed a robust RTOS architecture with mutex-protected queues for inter-task communication and fail-safe error handling. Prototyped on custom hardware, achieving automated remote field monitoring with 3-minute data intervals."

Pneumonia Detection in Chest X-Rays using Transfer Learning

Engineered a diagnostic deep learning model for the binary classification of pneumonia from chest X-rays, architecting a Convolutional Neural Network (CNN) that leverages a VGG16 backbone pre-trained on ImageNet.
Implemented a two-stage transfer learning protocol, initially training a custom classifier on frozen convolutional layers before fine-tuning the entire model's weights, a strategy that significantly boosted predictive performance.
Deployed an on-the-fly data augmentation pipeline to synthetically expand the training dataset, mitigating class imbalance and enhancing the model's generalization capabilities.
Achieved a benchmark accuracy of 93% on the held-out test set, creating a powerful proof-of-concept for computer-aided diagnosis in medical imaging.
Tech Stack: Python, TensorFlow, Keras, Scikit-learn, OpenCV, Matplotlib.

Deadlock Prevention and Detection in Java-Based OS Simulation

Developed a Java-Based OS Kernel Implemented deadlock prevention using resource allocation graphs and Banker's algorithm to ensure safe and efficient process execution. Integrated Real-Time Deadlock Detection Designed Java-based detection algorithms to identify circular wait conditions and resolve deadlocks dynamically. Optimized Thread Scheduling and Resource Management Enhanced process scheduling and synchronization mechanisms to minimize deadlocks, improving system performance and responsiveness.

Distributed Video Communication & Streaming Platform-NETWORKING, DS

Architected a unified video platform for both on-demand streaming and real-time multi-node video calling over a local network, optimizing for low-latency and high availability without consuming mobile data.
Implemented agent-based load balancing with a Flask API, using the Join-the-Shortest-Queue algorithm to efficiently manage resource utilization across edge nodes and cloud servers.
Engineered an adaptive bitrate streaming solution that dynamically adjusts video quality based on real-time network conditions, ensuring a smooth user experience.
Designed a dynamic replication scheduler to intelligently distribute video files to edge nodes, proactively mitigating demand spikes and enhancing content availability.
Integrated end-to-end encryption and digital image processing techniques to secure all video communications and optimize file sharing across the network.
Deployed Prometheus and Grafana for comprehensive, real-time performance monitoring, gaining actionable insights into server load, request patterns, and overall system health.
Technologies: Python, Flask, Nginx, Prometheus, Grafana, Distributed Systems.

PLEASE CHECK OUT MY GITHUB FOR MORE INTERESTING PROJECTS.

CERTIFICATIONS:

IIT MADRAS: AI & ML — CERTIFICATE ISSUED ON JAN 2025

IIT MADRAS: IoT automation with Raspberry Pi — CERTIFICATE ISSUED ON JAN 2025

ADDITIONAL INFORMATION

Programming Languages: Proficient in Python, Java, C,C++ Python, JavaScript,Go, Scala, Prolog, Embedded C
Web Development: HTML, CSS, React, Node.js, Express, RESTful APIs
Frameworks & Tools: React.js, Node.js, Tailwind CSS, Bootstrap, Figma, Streamlit, Scikit-learn, NLTK, Docker, REST APIs, OAuth 2.0, Graph Theory
Cloud Platforms: Google Cloud Platform (GCP), AWS, Microsoft Azure
Expertise: Distributed Systems, Full-Stack Development, Cloud Computing, NLP, IoT, Machine Learning, TCP/IP
Development Practices: Agile, CI/CD, Git, Jira, Jenkins, Unit Testing
Concepts: Large-scale System Design, Scalability, Data Compression, Search Technologies, Networking, Security
Strong understanding and practical application of efficient data structures and algorithms and DAA.
Databases: SQL, NoSQL.
Version Control: Git, GitHub.
Operating Systems: Unix/Linux, Windows.