BHARATHI S

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EDUCATION

Bachelor of Engineering in Electronics and Communication Engineering **CGPA: 9.0**
Chennai Institute of Technology (2023-2027)

INTERNSHIP EXPERIENCE

Machine Learning Intern at Cognifiyz Technologies | Aug 2024

- Developed and deployed ML pipelines for prediction, recommendation, and clustering tasks using datasets.
- Applied feature engineering, model optimization, and data visualization with scikit-learn and Pandas.

Software Development Intern at Doppler Weather Radar-India Meteorological Department | Nov 2025

- Engineered a Python-based radar beam blockage and propagation modeling system leveraging high-resolution DSM/DEM (JAXA), QGIS, and Rasterio for terrain-aware visibility analytics.
- Modeled wave propagation and terrain effects to optimize radar siting and enhance meteorological data accuracy.

PROJECTS

Carbon-Aware Serverless Scheduler | Aug 2025 - Oct 2025
Google Cloud Platform (Cloud Run, Functions, Firestore, Secret Manager), Python, Streamlit, Plotly, Docker, GitHub Actions, ElectricityMap API

- Built a carbon-aware multi-cloud orchestration system that dynamically routes workloads to the lowest-emission region using real-time ElectricityMap data (~87.8% CO_2 reduction).
- Deployed via Cloud Functions + Cloud Run with secure authentication and automated CI/CD pipelines, featuring a live Streamlit dashboard for carbon analytics.

Remote Structural Health Monitoring System for Heritage Buildings | Jan 2025 - Mar 2025
Python, Firebase, Cloud Functions, IoT Simulation, Plotly Dash, ML-based Anomaly Detection

- Developed an AI-driven cloud-IoT platform for real-time vibration, stress, and temperature monitoring using sensor fusion and ML-based anomaly detection.
- Integrated Firebase and Cloud Functions for live data streaming and built interactive analytics dashboards, reducing latency by ~35%.

Serverless ML Inference (AutoML Edge Deploy) | Sep 2024 - Dec 2024
Python, FastAPI, Docker, Google Cloud Functions , Cloud Storage, GitHub Actions, Streamlit

- Built an end-to-end MLOps-lite platform that auto-deploys trained ML models as serverless REST APIs with zero manual infrastructure setup.
- Integrated auto-scaling, CI/CD, and model versioning (v1-v2 rollback) with a live Streamlit dashboard for latency and request monitoring.

SKILLS

- **Programming & Frameworks:** Python (Pandas, NumPy, scikit-learn, TensorFlow, FastAPI), C, Java, SQL
- **Machine Learning & AI:** Supervised & Unsupervised Learning, Feature Engineering, Anomaly Detection, Model Deployment (AutoML, Serverless APIs), Generative AI (Google Cloud)
- **Cloud & DevOps:** Google Cloud Platform (Cloud Run, Functions, Firestore, Secret Manager, IAM), Docker, GitHub Actions (CI/CD), Cloud Storage, REST APIs, Linux
- **Data Visualization & Analytics:** Streamlit, Plotly Dash, Matplotlib, GeoPandas, Firebase Analytics, Real-time Dashboards
- **Web Development:** HTML, CSS, JavaScript, REST API Integration
- **Networking & Security:** CISCO Networking Essentials, Cybersecurity Fundamentals.

CERTIFICATIONS

- **Google Cloud Engineer Learning Path :** Earned 14-course skill badges covering Cloud Functions, IAM, Compute Engine, and Firestore integration.
- **Google Cloud Generative AI Specialization** : Completed beginner, intermediate (Gemini for Google Cloud), and advanced developer learning paths (25+ courses total) focusing on Generative AI, Prompt Design, and Model Deployment.
- **Programming in C :** Certified by CISCO Networking Academy.
- **SQL Programming** : Certified by SkillRack and Coursera (Linux & SQL specialization).
- **Cybersecurity & Networking Fundamentals** : Completed CISCO certifications in Cyber Security Essentials, Introduction to Cybersecurity, and Networking Essentials.

RESEARCH WORKS

- **A Literature Review on Cloud–DevOps Synergy for Scalable and Reliable Machine Learning Lifecycle Management (On process):** A comprehensive review proposing the **Adaptive Cloud–DevOps Orchestration Framework (ACDOF),** an innovative model integrating predictive orchestration, energy-aware scheduling, and self-healing automation to advance intelligent and sustainable MLOps systems.

- **Research and Implementation of ACDOF: An Adaptive Cloud–DevOps Orchestration Framework for Sustainable Machine Learning Workflows (On process):** Designed and developed ACDOF, a research-driven framework integrating **predictive orchestration, energy-aware scheduling, self-healing automation, and a unified governance framework** for hybrid cloud environments. The model enhances scalability, observability, reproducibility, and sustainability in ML lifecycle management by bridging DevOps and MLOps across multi-cloud infrastructures.

ACHIEVEMENTS

- **Google Cloud Certified Cloud Digital Leader** : Successfully cleared the official Google Cloud certification exam, demonstrating proficiency in cloud architecture, AI integration, and data services.
- Solved 1500+ coding problems across LeetCode, CodeChef, and SkillRack, strengthening algorithmic problem solving, DSA proficiency, and competitive programming skills.