Swathi Meghana Kolar Rajeev

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LinkedIn | GitHub | Portfolio

SUMMARY

Impact-driven full-stack and machine-learning engineer who builds end-to-end AI-powered applications and scalable web services—leveraging React/TypeScript front ends, Flask/FastAPI back-ends, deep-learning frameworks, and cloud-native MLOps to deliver measurable performance and business impact.

EDUCATION

UNIVERSITY OF SOUTHERN CALIFORNIA *Jan 2024 – Dec 2025 | Los Angeles, CA*
M.S. in Computer Science (3.78/4.0)
• Coursework – Analysis of Algorithms, Web Technologies, Database Systems, Information Retrieval and Search Engines, Machine Learning for Data Science, Applied Cryptography

VIDYAVARDHAKA COLLEGE OF ENGINEERING (VTU) *Aug 2019 – May 2023 | Mysuru, India*
B.E. in Computer Science and Engineering (9.30/10.0)
• Coursework – Data Mining, Artificial Intelligence and Machine Learning, Big Data Analytics, Data Structures, Software Engineering

WORK EXPERIENCE

NailedIT Labs *May 2025 – Aug 2025 | Seattle, WA*
Full Stack Developer Intern
- Integrate AI recommendation and classification models into a React/TypeScript marketplace, boosting booking conversions.
- Architect and maintain FastAPI microservices, with PostgreSQL, containerize via Docker, and automate CI/CD with GitHub Actions.
- Collaborate with founders to design secure, scalable infrastructure on GCP and AWS.

University of Southern California *May 2024 – May 2025 | Los Angeles, CA*
Graduate Research Assistant (Part-time) – Detection of Diabetic Retinopathy
- Designed and fine-tuned a **ResNet50-based model** for medical image analysis of diabetic retinopathy with **CLAHE preprocessing** and real-time **image augmentation**, achieving ~85% validation accuracy.
- Addressed class imbalance through strategic **downsampling and dynamic class weighting**, enhancing recall for rare disease classes by 30%.
- Led comprehensive **model evaluation** using confusion matrices and classification reports, iterating on architecture and hyperparameters for optimal performance.

CoachEd *Sept 2022 – Oct 2022 | Bengaluru, India*
Front-end Web Developer Intern
- Built a responsive in-vehicle infotainment dashboard using **HTML5, CSS3, and JavaScript**—integrating Bluetooth, GPS, media and radio controls—to reduce driver-reported distractions by 25%.
- Engineered dynamic brightness adjustment and a live clock component in JavaScript, cutting UI update latency by 50% and lifting user satisfaction.
- **Championed Agile best practices**—leading code reviews and paired debugging—to shrink high-priority bug resolution time by 35%.

SKILLS

Programming: Python, Java, C, C++, JavaScript/TypeScript, Swift, Kotlin
Front-end: React, Angular, HTML5/CSS3, Bootstrap, Figma, Tailwind CSS, Xcode, SwiftUI
Back-end & Architecture: Flask, FastAPI, Node.js/Express, Microservices, RESTful APIs
Machine Learning & AI: TensorFlow, PyTorch, Scikit-learn, Keras, OpenCV, Pandas, NumPy, SQL, Matplotlib, Seaborn
Cloud & MLOps: AWS, GCP, OCI, Docker, Kubernetes, CI/CD (GitHub Actions)
Databases: PostgreSQL, MongoDB, MySQL, Supabase
Tools & Methodologies: Git, GitHub, Jira, Agile/Scrum, Unit Testing
Soft Skills: Problem Solving, Communication skills, Team Collaboration, Leadership, Analytical and Critical thinking, Attention to Detail

PROJECTS

Secure EHR Audit Logging System with custom OpenAI Chatbot
- Architected a full-stack solution (**React frontend, FastAPI backend, PostgreSQL**) with role-based access and secure session management.
- Hardened audit trails using **RSA** digital signatures, **SHA-256** hashing, and **AES-128** encryption—reducing integrity incidents by 40%.
- Embedded a **GPT-powered chatbot via Supabase FAQs** and **automated Docker/AWS deployments** with CI/CD actions to accelerate releases.

Real-time Weather Forecast Application (Web & iOS)
- Developed a responsive **MEAN-stack** web app and **Swift iOS** client consuming Tomorrow.io API—improving cross-device usability by 35%.
- Implemented **RESTful CRUD services with MongoDB Atlas**, cutting redundant API calls by 60%.
- **Deployed the full stack to GCP** auto-scaling environments, ensuring 99.9% uptime under peak loads.

Transfer Learning-Based Waste Classification System
- Built transfer-learning pipelines in **TensorFlow/Keras** using pre-trained **ResNet50, ResNet101, VGG16, and EfficientNetB0** (frozen base + custom FC head) to classify nine waste categories.
- Engineered an **OpenCV/Keras preprocessing and augmentation** workflow with batch normalization, dropout, and early stopping to enhance generalization.
- **Selected ResNet50 as the production model**—achieving 0.79 precision, 0.78 recall, 0.77 F1, and 0.97 AUC on the test set.

CERTIFICATIONS AND ACHIEVEMENTS

- **AWS Certified Cloud Practitioner | Oracle Cloud Infrastructure AI Foundations Associate | IBM SkillsBuild: Data Structures**
- Awarded as the '**Department's Best Outgoing Student**' at my Undergraduate University - VVCE.
- Underwent **Salesforce MuleSoft Training**. Gained experience in API lifecycle management, system integration, and flow orchestration.
- Participated in **Devfolio OnLoad 2.0 Hackathon** and presented an **Android Mobile Application – MediAssist**.