Gayathri Kalthi Reddy

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EDUCATION

The George Washington University, School of Engineering & Applied Science — **Washington, DC**
Master of Science in Computer Science, CGPA – 3.71/4.0 — **May 2025**
- Coursework: Cloud Computing, Big Data, Data Mining, Machine Learning, Database Systems, Algorithms, Computer Vision.

Vasavi College of Engineering — **Hyderabad, India**
Bachelor of Engineering in Information Technology, CGPA – 8.52/10.0 — **May 2023**
- Coursework: Data Structures, Object-Oriented Programming, Distributed Systems, Operating Systems, Neural Networks and Deep Learning, IoT, Artificial Intelligence, Web Development, Computer Networks, Computer Architecture, Statistics.

TECHNICAL SKILLS

- **Languages & Tools:** Python, JavaScript, Java, C++, SQL, Bash, HTML, CSS, TypeScript, Git, Postman, Jupyter, MongoDB, PostgreSQL, Linux CLI
- **Frameworks, Libraries & Platforms:** React, Next.js, Vue.js, Apollo server, UI/UX design, Flask, Node.js, Scikit-learn, PyTorch, TensorFlow, Pandas, NumPy, Fast API, Plotly, Folium, OpenCV, GraphQL, Jira, PySpark, Pytest, Langchain, REST APIs, LLM APIs (OpenAI GPT-4o), Kubernetes, Power BI, Tableau, Microsoft Office Suite, AWS, Microsoft Azure, Oracle Cloud, Vercel, Docker, GitHub Actions

WORK EXPERIENCE

Full Stack Developer, Swipe Savvy, Remote (Washington, DC) — **August 2025 – Present**
- Engineered an AI-powered marketing orchestration engine for **1,000+ simulated merchants**, using **Node.js, TypeScript, GraphQL, AWS SES/SNS**, and load-test data. Reduced **API latency 38%**, increased **event throughput 32%**, enabling scalable test deployments.
- Built real-time analytics across **10K+ campaign logs** using **Next.js, NestJS, Apollo, PostgreSQL** with resolver caching, improving **dashboard load speed 47%** and reducing **query overhead 35%**. Added an **Analytics Agent (GPT-4)** generating spending insights and savings recommendations.
- Implemented schema-first **GraphQL federation** with **Apollo + Pydantic models**, reducing **resolver failures 60%** and accelerating **schema iteration 40%**. Developed a **Checker Agent (GPT-4)** enforcing PCI/PII-safe responses and alignment for consumer-facing interactions.

Mobile Application Intern, Medfilo Inc, Remote (Washington, DC) — **June 2025 – August 2025**
- Built backend microservices using **Node.js, TypeScript, Express, PostgreSQL, Sequelize**, optimizing REST workflows and API routing. Reduced **response latency 20%**, decreased **server overhead 18%**, and improved overall reliability for React Native client integrations.
- **Engineered HIPAA-compliant PDF generation and delivery pipelines** using PDFKit, AWS S3, encrypted storage, and signed URL access control, automating dynamic report previews. Improved rendering speed 35% and cut storage round-trips 22% for smoother mobile access.

Technical Support Assistant, The George Washington University, Washington, DC — **August 2024 – May 2025**
- Developed an internal IT ticketing platform using **Python, React, PostgreSQL**, integrating automated classification workflows. Reduced **triage time 40%**, increased **routing accuracy 25%**, and improved overall support workflow efficiency across daily operational requests.
- Integrated **Naive Bayes NLP models** into backend APIs for auto-categorizing support tickets, analyzing text patterns. Cut **misclassification 30%**, improved **resolution speed 22%**, resulting in faster, more consistent issue-handling cycles.
- Enhanced backend performance by tracing SQL call stacks and redesigning query logic using **PostgreSQL indexing and batching**. Improved **stability 35%**, reduced **query latency 28%**, and strengthened reliability across dynamic request loads.

**Software Developer, NSL Hub (Startup), Hyderabad, India** — **July 2022 - July 2023**
- Designed a distributed academic data platform for **faculty and admin teams**, using **Node.js, TypeScript, PostgreSQL**. Reduced **query latency 62%**, increased **report generation throughput 55%**, enabling faster decision workflows for student and financial record processing.
- Resolved severe API performance bottlenecks in student-services workflows by optimizing **REST apis**. Improved **response times from 1.8s to 420ms**, increased **concurrency 3×**, delivering smoother interactions for operational staff.
- Built ML pipelines for **student performance prediction and sentiment analysis**, using **Random Forest, Linear Regression, BERT/DistilBERT**. Achieved **R² 0.89** and **F1-score 0.84**, empowering administrators with early-risk insights and engagement trend visibility.
- Delivered analytics and data-processing features through **Agile sprints**, containerizing services with **Docker on AWS EC2**. Improved **model reliability 30%**, reduced **manual data refresh effort 50%**, accelerating iteration velocity across the engineering team.

Research Intern – Machine Learning, Vasavi Lab, Hyderabad, India — **June 2022 - January 2023**
- Fine-tuned a **ResNet-34 CNN** on **54K+ agricultural images** to improve plant disease detection accuracy. Achieved **93% test accuracy**, increased **inference consistency 14%**, supporting more reliable automated diagnosis workflows for agritech research.
- Engineered advanced preprocessing using **OpenCV and NumPy** to normalize inputs and remove noisy backgrounds. Improved **model stability 18%**, reduced **false positives from 12% to 6%**, significantly strengthening prediction reliability for field-level datasets.
- Implemented data augmentation and early-stopping strategies to mitigate overfitting across **38 disease classes**. Reduced **training variance 22%**, improved **generalization 17%**, enabling more robust disease classification performance across unseen image distributions.

PROJECTS

InsightAd - LLM-Powered Ad Ranking System | Python, Pytorch, Pandas, Numpy, LLM ⧉
- Designed a **two-stage ad ranking architecture** combining **probabilistic CTR prediction** and **LLM-based explanation** generation, promoting transparency in model outputs and scalability across ad categories. Implemented custom scoring logic using **NumPy** and vector embeddings to simulate ad-user fit.

Mediguide – ML-Driven Prescription Matcher | Python, Scikit-learn, Streamlit, Joblib, Pandas, NumPy, folium, Pickle ⧉
- Developed AI-powered health assistant using Python, Scikit-learn, and Streamlit to enable real-time **disease prediction** from 130+ symptoms and personalized medicine recommendations using **cosine similarity**; designed a **modular**, **distributed system** with hospital search, gov. schemes, and geolocation, **optimizing** for **performance** and ambiguous input handling.

Smart Logistics Platform | Python, Streamlit, Pandas, Plotly, Scikit-learn, OpenAI GPT-4o, NumPy. ⧉
- Built a full-stack **Smart Logistics Dashboard** using **Python**, **Scikit-learn**, **Folium**, **Streamlit**, and **OpenAI GPT-4o**, with ML-based delay prediction, dynamic route optimization, and interactive shipment tracking; implemented a **multi-tiered system** with custom algorithms and AI-generated recommendations, and performance analytics to simulate, **resource scheduling**, and decision support.

LEADERSHIP & ACHIEVEMENTS

- **Top 10 Finalist**, NTT AI Data Hackathon 2022 for innovative ML-based efficiency solutions.
- Selected among 300+ applicants for a **competitive summer research internship** at IIIT Hyderabad.
- **Tech Lead – TechSavishkar, Vasavi College** – Led the development track of the annual tech fest, organizing coding contests, technical talks, and hands-on workshops that drew 500+ participants across college.