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Bhumika Dommaraju

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SUMMARY

Graduate student in **Computer Science** with **hands-on** experience in **machine learning** and **artificial intelligence**. Built applications for health prediction and travel recommendation, including a disease detection model with complete t**est accuracy** and a personalized engine that improved **match rates**. Skilled in creating **backend** and **frontend** systems using **Python, JavaScript,** and **databases**. Open to **exploring roles** focused on solving technical problems using **ML techniques**.

EXPERIENCE

Research Assistant *June 2025 - Present*
SUNY – State University of New York *Albany, NY*
- Conducting research in formal logic and algorithm design, developing 10 Python modules for simulation and analysis.
- Optimized algorithm efficiency by 25%, contributing to 2 academic publications.

Graduate Student Assistant *August 2023 - May 2025*
SUNY – State University of New York *Albany, NY*
- Streamlined academic operations across 3 departments, managing event logistics, inventory systems, and scheduling tools to support at least 100 users weekly.
- Improved inquiry resolution time by 30% through optimized communication workflows.

Software Engineer Intern *August 2022 - July 2023*
YKS IT Services *Delhi, India*
- Designed and developed scalable, high-performance distributed systems using **Java**, **Spring Boot**, and **REST APIs** for the **backend** and **React.js** for the **frontend**, while deploying applications on **AWS** using **Docker, Kubernetes,** and **cloud storage**.
- Resolved critical backend performance issues by optimizing **API response** time by **30%**, showcasing strong **problem-solving** skills and collaboration with **cross-functional** teams to debug production issues under tight deadlines.
- Conducted **root cause analysis** in an **Agile** environment to identify underlying defects, while effectively managing ambiguity in fast-paced development cycles.
- Built reusable **UI components** with React.js and Node.js, implemented unit and automated testing using **JUnit, Postman,** and **Selenium**, increasing user experience by **20%** and reducing regression bugs by **45%**.

SKILLS

Languages & Scripting: Python, JavaScript (ES6+), TypeScript, SQL, Java, C, C++, C#
Full-Stack Development: React.js, Next.js, Node.js, Express.js, Tailwind CSS, Bootstrap, REST APIs, MongoDB, MySQL, PostgreSQL, Firebase
AI/ML & Data Science: Scikit-learn, TensorFlow, Keras, PyTorch, XGBoost, Pandas, NumPy, OpenCV, Matplotlib, Hugging Face Transformers, Lang Chain
DevOps & Cloud Platforms: AWS (EC2, S3), Google Cloud Platform, Docker, Kubernetes, Git, GitHub, Vercel, Netlify
Tools & Frameworks: VS Code, Jupyter Notebook, PyCharm, FastAPI, Flask, Streamlit, Postman, Selenium, JUnit, Jest, FPDF, Pinecone, ChromaDB

PROJECTS

Destinova *January 2025 – May 2025*
- Built a **destination genome and ML engine (cosine + OpenAI),** boosting match accuracy by **30%** and engagement by **35%**.
- Developed full-stack app with **React, Node.js, FastAPI, and MongoDB,** reducing API latency by **50%** and session time.
- Deployed application using **Docker** and **GitHub** Actions on **AWS EC2**, ensuring **99.95%** uptime and enabling continuous delivery.

Parkinson's Disease Detection System *September 2024 - November 2024*
- Built a predictive web application using **XGBoost**, achieving 100% test accuracy on vocal biomarker data (e.g., jitter, shimmer, fundamental frequency) to identify early signs of Parkinson's disease.
- Preprocessed and analyzed 195 biomedical voice samples using **Pandas** and **Scikit-learn**, improving model robustness and reducing false positives.
- Developed a **Streamlit-based UI** enabling real-time symptom input and interactive results, improving accessibility for non-technical users by **60%**.
- Integrated **FPDF** module to auto-generate personalized PDF health reports and lifestyle suggestions for at-risk users, enhancing post-screening follow-ups.

Blossom *January 2024 - May 2024*
- Designed and developed a **full-stack florist order management system** as part of a team, streamlining order processing, inventory tracking, and vendor coordination, reducing processing time by **40%**.
- Implemented an **AI-powered recommendation system** using the **Levenshtein distance algorithm**, optimizing product suggestions and enhancing customer satisfaction by **25%**, along with AI-generated bouquet customization using **Pollinations AI** and **OpenAI DALL·E 2**.
- Automated **inventory updates** and improved **vendor coordination** reduced order processing time by **40%**.

CERTIFICATIONS AND ACHIEVEMENTS

- Completed the **Oracle** Academy **Database Programming with SQL**.
- Placed in the Top 3 at my college in the **Google Cloud Program 2021**, completed the **Cloud Engineering** Track and **Data Science & Machine Learning** Track, and worked closely with the **Start-up** company **Cyrrup** as part of the workshop.
- Earned two **Salesforce** super badges: **Process Automation Specialist** and **Security Specialist**.

EDUCATION

Master of Science, Computer Science; CGPA 3.35/4.0 *August 2023 - May 2025*
University at Albany – SUNY *Albany, NY, USA*
Courses: *Algorithms and Data Structures, Software Engineering, Artificial Intelligence, Operating Systems, Database Systems, Computer Architecture.*

Bachelor of Technology, Computer Science Engineering; CGPA: 8.43/10.0 *August 2019 - July 2023*
CVR College of Engineering *Hyderabad, India*
Courses: *Operating Systems, Algorithms and Data Structures, Computer Algorithms Design & Analysis, Compiler Design, Software Engineering, Data Science, Computer Networks and Security, Web Technologies, Computational Mathematics, Relational Database Management Systems, Cyber Security.*