Vamsi Krishna Maram

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EDUCATION

Master of Science in Computer Science, George Mason University **Jan 2024 — Present**
- **Relevant Course Work:**Advanced Data Structures, Data Science, Algorithms Analysis, Database Management, Data Mining, Cyber Security, Systems Programming, Machine Learning, Advanced Natural Language Processing

Bachelor of Technology in Computer Science and Engineering, University College of Engineering Kakinada **Aug 2019 — Jul 2023**
- **Relevant Course Work:**Data Structures, Object-Oriented System Design, Distributed Systems, Computer Architecture.
- **Honors & Achievements:**Best Graduation Project Award, Hackathon Winner(DBS Bank).

WORK EXPERIENCE

Software Developer **January 2025 — Present**
George Mason University Virginia, USA
- Built Python UAV sensor detection tool with **Streamlit** and **Folium**, processing 1,000+ grid cells across 100+ square kilometers.
- Implemented probabilistic algorithms using **NumPy** and **SciPy** for 300+ sensor configurations with **93% precision**.
- Developed interactive visualization dashboards supporting **10+ sensor types** with real-time probability analysis capabilities.
- Optimized complex geospatial data workflows handling **20+ parameters** including altitude, range, and operational speed.
- Created modular software architecture with **6 reusable components** for scalable and efficient sensor integrations.

Graduate Student Assistant **Aug 2024 — Dec 2024**
George Mason University Fairfax, Virginia
- Assisted in developing the **InternConnect** website using **Python**, **Flask**, **HTML**, and **JavaScript** to offer career resources for students. Supported backend functionality with **SQLite** and **SQLAlchemy**, managing data for internship listings and student profiles.
- Contributed to enhancing the user interface by creating wireframes in **Figma**, then implementing intuitive, mobile-responsive designs using **HTML**, **CSS**, and **JavaScript** to improve user engagement.

Software Engineer Intern **June 2022 — Aug 2022**
Microsoft India
- Migrated REST-based Azure Client-Offerings backend to **GraphQL API** technology for enhanced user experience and performance.
- Replaced inefficient HTTP query string operations with optimized **object-oriented software patterns** across the architecture.
- Solved unit-testing challenges for GraphQL non-overridable objects using innovative testing methodologies and frameworks.
- Increased overall code coverage by **67%** through comprehensive test suite development and implementation.
- Improved API response times and data fetching efficiency by leveraging GraphQL's selective querying capabilities.
- Enhanced backend scalability and maintainability through modernized API architecture and design patterns.

PROJECTS

TooneyTunes Music Game | Phaser.js, JavaScript, Spotify API, Node.js, melody.ml, WebAudio API
- Developed interactive **Phaser.js** platformer game with dynamic level generation based on real-time Spotify track analysis, implementing advanced low-level programming concepts for seamless audio processing.
- Integrated **Spotify API** for secure user authentication and comprehensive playlist access, enabling seamless music library connection and highly personalized gaming experiences.

BookTable Reservation System | HTML, CSS, JavaScript, React, Node.js, MySQL, AWS EC2
- Built comprehensive full-stack restaurant reservation system using **React**, **Node.js**, and **MySQL** with robust role-based access control for Customer, Manager, and Admin users.
- Successfully deployed on **AWS EC2** with automated auto-scaling and intelligent load balancing configuration for enhanced high availability and optimal performance under varying traffic loads.

Quiz Application | Java, Spring Boot, MySQL, RESTful APIs, Postman
- Developed comprehensive backend quiz management application using **Spring Boot** and **Java**, exposing well-structured RESTful APIs to efficiently manage quizzes, questions, and user responses.
- Implemented robust input validation and comprehensive exception handling with optimized **MySQL** integration for reliable data storage; thoroughly tested all API endpoints using **Postman** for maximum reliability.

TECHNICAL SKILLS

- **Languages:** Python, Java, C/C++, SQL, Shell Scripting, JavaScript.
- **Machine Learning/AI:** Scikit-learn, TensorFlow, BERTScore, BLEU, ROUGE, XGBoost, AUROC evaluation.
- **Cloud/DevOps:** AWS (S3, EC2, Lambda, Glue, Athena, QuickSight, IAM, Redshift), Docker, Jenkins, CI/CD, Terraform.
- **Frameworks/Tools:** Spring Boot, Django, React, Celery, RabbitMQ, Git, Jupyter, Pandas, Numpy, PostgreSQL, SQLite, MySQL, Git.
- **Data Visualization:** QuickSight, Tableau, Matplotlib, Seaborn, Excel.