Shiva Kalyan Sunder Diwakaruni

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Education

Clemson University, SC **Aug 2023 - May 2025**
Master of Science, Computer Science (Specialization: Networks, Systems, and Security) **GPA: 4.0/4.0**
Graduate Research Assistant - VIPR-GS Lab, Autonomous Ground Vehicle Reliability (10+ Environmental Factors)

JNTUH College of Engineering, Hyderabad, India **Aug 2016 - Sep 2020**
Bachelor of Technology, Computer Science (Technical Assistant) **GPA: 9.11/10**
NASA Space Apps Hackathon finalist, **Founder** of Bits and Bytes: Guiding 200+ students in DS & Algo.

Technical Skills

Languages: Python, MATLAB, C++, C, JavaScript, SQL, Bash, Java
Tools/Frameworks: REST APIs, AWS, Git, Perforce, Docker, Linux, Operating Systems, React, Flask, RASA, Android Studio, mitmproxy, Jira, Azure LUIS
Technologies: Cloud Computing, Object Oriented Programming, Cybersecurity, CI/CD, Machine Learning

Experience

MathWorks **Hyderabad, India**

Senior Associate Software Engineer **Nov 2020 - Jul 2023**

- Achieved 50% Faster Real-time Data Processing (1M+ Data) with Scalable C++ Concurrent Queues and Data Reduction Techniques (Dojo/C++).
- Implemented data thinning techniques, resulting in a ∼30-second reduction in latency for large data transfer between frontend and backend.
- Designed a scalable User-Defined Zooming feature for efficient data exploration in XY visualizations, supporting over 50 concurrent instances per session.
- Enhanced performance by employing a stateful design and integrating publisher-subscriber services, leading to a 60% reduction in frontend redraws and a 20% decrease in backend data load.
- Reduced user errors by 40% in Simulink Data Inspector by implementing interactive map components utilizing a client-side rendering framework.
- Resolved 50+ bugs through customer and team collaboration, ensuring feature robustness with UI and unit testing.

Software Engineering Intern **Jan 2020 - Jun 2020**

- Architected APIs with an optimized latency of $\tilde{1}$0ms to render traffic lights from OSM, HERE HD.
- Represented traffic network as a Graph. Scaled design to Automatic scenario generation and simulation.
- Created a MATLAB simulation replicating traffic light functionality, improving junction detection accuracy by 40%.
- Facilitated and presented knowledge sharing meetings focused on advanced technologies (DL, ADAS).

Sayint.ai **Hyderabad, India**

Software Engineering Intern **Nov 2018 - Mar 2019**

- Engineered high-performance APIs for handling large incoming flow of Speech to Text conversion requests, slashing cloud compute costs by $75k.
- Drove an 85% accurate text classifier for call centers, boosting performance monitoring and customer satisfaction.
- Transformed speech-to-text conversion tool into a scalable cloud-based SaaS solution, enabling a 30% increase in handling larger workloads.

Academic Projects

Serverless Deepfake Text Detection Platform

- Built a serverless web application utilizing AWS Lambda and API Gateway, providing users with real-time feedback on likelihood of uploaded text content being a deepfake.

Network Traffic Analysis of Third-Party Android Applications GitHub

- Spearheaded an automated Android app analysis project to unveil data collection practices, leading to a 60% time efficiency gain.

Navigation Bot

- Developed an A*-powered Teams bot as a part of MathWorks Hack Day for efficient office navigation.

Earthquake Alert System GitHub

- Collaborated with team of 4 to develop an Android app to alert, notify, and provide a safety checklist for users of an impending earthquake, employing Android Studio, PHP, HTML, CSS, Javascript, and Google Maps API.

Achievements & Publications

- Completed **AWS Certified Developer Associate** certification.
- Published research on Speech Emotion Recognition (SER) using Mel spectrograms, attaining a 75% accuracy.