Shiva Kalyan Sunder Diwakaruni

📍 Clemson, SC 29634 | 📞 (+1) 8647657701 | ✉️ sdiwaka@g.clemson.edu | 💼 linkedin.com/kshiva98 | 🌐 Portfolio

EDUCATION

Clemson University, SC **Aug 2023 - May 2025**
Master of Science in Computer Science **GPA: 4.0**
Coursework: Deep Learning, Applied Data Science, Security in Advanced Networking Technologies, Security in Emerging Systems, Computer Security Principles, Statistics

EXPERIENCE

Clemson University, VIPR-GS Lab, USA - *Graduate Research Assistant* **Jan 2024 - Present**
- Prototyping off-road vehicle autonomy within unstructured environment for VIPR-GS initiative, in collaboration with U.S. Army GVSC, incorporating sensitivity analysis of **10+** environmental factors to optimize algorithm performance in variable conditions, advancing ground system innovations.

MathWorks, India - *Senior Associate Software Engineer* **Nov 2020 - Jul 2023**
- Drove performance improvement of backend data processing speed with **C++**, accomplishing a **50% increase** in visualization of XY data by applying data thinning techniques.
- This initiative, involving effective communication with team members, proved invaluable for managing large time series datasets exceeding **1 million data points**.
- Spearheaded a critical feature in Simulink Data Inspector's map visualization component, introducing responsive legend and tooltip leading to a **40%** reduction in user errors related to signal identification.
- Leveraged **Mapbox GL APIs** in a frontend project to improve, marker differentiation enabling clear distinctions between source, destination, and cursor markers, dynamically updating **3 parameters** - latitude, longitude and time.
- Streamlined user experience by adding a **Limits section** with 6 attributes in the XY visualization settings panel using **JavaScript**, enabling canvas limit adjustments and ensures persistent storage across multiple visualizations.
- Communicated with customers and cross functional teams to diagnose and resolve over 50 bugs from testing and customer feedback. Performed UI and unit testing to ensure robustness and functionality of integrated features.

Dr K P Supreethi, JNTUHCEH, India - *Research Intern* **Jul 2020 - Oct 2020**
- Conducted an extensive Speech Emotion Recognition (SER) analysis by leveraging **Mel spectrograms** and enhancing data with 2 augmentation methods such as time-shifting and time-frequency masking, utilizing **Python**.
- Achieved an average model **accuracy of 75%** and documented findings in a published research paper.

MathWorks, India - *Associate Software Engineering Intern* **Jan 2020 - Jun 2020**
- Designed and implemented APIs in **Python** and **JavaScript** to extract accurate traffic light position data from **3 different road network databases**, mapping retrieved data to lanes within a simulated road network.
- Devised high-precision algorithms for traffic light functionality and lane/junction detection in user-defined road networks, with a specific emphasis on importing and managing 3 traffic light states for **Adaptive Cruise Control** in simulated environments using **MATLAB**.

Sayint.ai, India - *Software Intern* **Nov 2018 - Mar 2019**
- Formulated **Python**-based regex rules to extract intent and entity information from thousands of customer emails stored in a **PostgreSQL** database.
- Performed a detailed comparison among 2 chatbot frameworks(**RASA, Azure LUIS**) and **regex-based rules**.
- Created an email classification bot for Teamlease client with RASA, integrating clustering, word-to-vector, associativity, and n-gram analysis and attained an **accuracy of 85%** for email categorization.
- Aimed at accurately classifying emails into **5** distinct categories related to employee salary issues.

TECHNICAL SKILLS

Languages:	Java, Python, C, C++, MATLAB, JavaScript, SQL, TypeScript
Web Technologies:	HTML5, CSS3, Bootstrap, React, PHP, Django, Flask
Databases:	PostgreSQL, MySQL, OracleDB
Tools/Frameworks:	Git, Jquery, Node.js, React, RASA, Android Studio, mitmproxy
Other Technologies:	Docker, RESTful API's, Microservices, GitLab, WebSockets, Postman, Agile, Jira, Azure, AWS

NOTABLE PROJECTS

Network Traffic Analysis of Third-Party Android Applications: Leveraging ChatGPT for Insights
- Led a team in conducting thorough data analysis on third-party Android apps, utilizing an emulator setup aimed at APKMirror apps to uncover data collection practices. Orchestrated automation of app installation, fuzzing, and capturing network traffic through **mitmproxy** and **Python**. resulting in a **60%** reduction in time expenditure.

Earthquake Alert System | *NASA Space Apps Hackathon* | ***College Level Winner***
- 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**.