

SURIYA KUMAR

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EDUCATION

Master of Science in Computer Engineering, University of California 09/2023 – present | Riverside, California
Bachelor of Technology in Computer Science and Engineering,
Vellore Institute of Technology 07/2019 – 10/2023 | Chennai, India

PROFESSIONAL EXPERIENCE

Student Research Assistant, CE-CERT Lab at UCR 08/2024 – present | Riverside, CA
- Analyzing Braking patterns of heavy-duty vehicles using data from PEMS system, integrating GPS for geographic-based emission mapping.
- Preprocessed large-scale datasets using advanced **interpolation** and **noise reduction** techniques, followed by the application of **DBSCAN** clustering for braking behavior evaluation.
- Created visualizations for EMFAC (Emission Factors Model), plotting emission trends and vehicle operational data using **Seaborn** and **Tableau**.

Volunteer Programming Intern, Brain Game Center at UCR 10/2024 – present | Riverside, CA
- Working on streamlining cognitive assessments for senior citizens with dementia and Alzheimer's by utilizing **OpenAI Whisper** to transcribe **verbal fluency tests** and evaluate **confidence scores**, providing real-time feedback to improve interviewer prompts and enhance session accuracy
- Automating the integration of **transcriptions** and **confidence data** with cognitive performance metrics, creating data pipelines to support research teams

Web Developer Intern, Apollo Trident 05/2021 – 08/2021 | Texas (Remote)
- Developed and maintained a scalable, responsive corporate website using **Angular**, **HTML**, **CSS**, and **React.js**, ensuring a seamless user experience across devices.
- Implemented and maintained **CI/CD pipelines** to streamline deployment processes, improve code integration, and ensure smooth, automated delivery

PROJECTS

LoreKraft, 08/2024
Multi-Agent AI System for Dungeons and Dragons (Cal Hacks 11.0)
- Developed an **AI-driven MMORPG engine** using **multi-agent systems** with **OpenAI GPT-4**, integrating **RAG** for real-time data retrieval, **React JS** for dynamic player interaction, and **MongoDB** for scalable data management.
- Built a custom **Dungeon Master assistant** to generate real-time narratives and game events, with a **Flask** backend, **Node.js** for player session handling, and experimentation with **Snap Spectacles** for AR-enhanced gameplay

Semantic Segmentation of Li-DAR Images using 3D U-NET, 10/2022 – 03/2023
IEEE Publication - Under Review
- Developed a 3D based **neural network** model that accurately interprets **LiDAR** (Light Detection and Ranging) data, improving autonomous vehicle perception for safer and more efficient navigation by detecting and classifying on-road objects like pedestrians and vehicles in real-time.
- This project offers advancements in urban mobility and safety, aligning with global efforts to improve transportation efficiency and decrease road traffic fatalities through enhanced AV perception

SKILLS

Expertise Areas: Data Analytics , Machine Learning (Certified), Web Development , Generative AI (Certified)
Programming Languages: Python, Java, HTML, CSS, JavaScript, , C++
Tools/Technologies: Tableau, Spreadsheets, SQL (MySQL, MariaDB), Flask, FastAPI, GIT, Pandas, TF, React, Seaborn, RestFUL API, Angular, Kubernetes, Azure Cloud Services (Certified)

ACHIEVEMENTS

Smart IoT category at Make-n-Code-a-Thon (2nd runner-up) Developed a smart hub for children using ML and Audio Processing to bridge educational gaps in underserved areas.