Soorya Saravanan

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Education

University of California Riverside — Riverside, CA
Bachelor of Science in Computer Science, Minor in Business — *Sep. 2021 – June 2024*

University of California Riverside — Riverside, CA
Masters of Science in Computer Science — *Sep. 2024 – June 2025*

Relevant Coursework

Software Construction, Design and Architecture of Computer Systems, Theory of Automata and formal language, Compiler Design, Design of Operating Systems, Artificial Intelligence, Database management systems, Big Data Management, Concurrent Programming in Parallel Systems, Algorithms in Bioinformatics

Experience

Software Development Intern — June 2023 – September 2023
NC4 Department of Defense Center of Excellence — *Riverside, CA*

- Designed and Developed an AI-powered drone using **Nvidia Jetson Nano** and **Oakd S2**, optimizing processing with **CUDA** and **cuDNN**, resulting in a **30% reduction** in data processing time.
- Validated API endpoints through comprehensive testing using **Postman**, encompassing **100+ test cases** across diverse scenarios, resulting in a **98% accuracy** rate.
- Engineered a **RESTful API** framework with **20+ endpoints**, facilitating bidirectional communication between the AI-driven drone and external software applications
- Leveraged **Python and Open3D** to implement depth clustering algorithms, accurately grouping similar **depth** values from Oak-D S2 depth maps.
- Integrated depth-based **ROI selection and subsumption architecture** to optimize subsequent object detection processes, enhancing overall tracking accuracy.
- Verified AI drone algorithm's performance with Software-in-the-Loop **SITL simulations**, achieving a tracking **accuracy of 95%** within a range of 10 meters.

Software Engineering Intern — June. 2022 – Sep. 2022
Audeze — *Irvine, CA*

- Launched and designed architecture utilizing **AWS Lamba, S3 Bucket and Glacier, CloudWatch, RDS, and SQS** to handle the processing of **30,000 images** daily.
- Developed a Python script utilizing **Boto3 SDK** to capture images every minute from an external camera and upload them to an **S3 bucket**, achieving an average upload time of 2 seconds per image.
- Optimized costs by transitioning processed images to **S3 Glacier**, yielding a **30% cost reduction** while ensuring data accessibility and compliance.
- Integrated **Lambda** function triggers, automating the extraction of serial numbers from images through **AWS Textract**, resulting in an 85% reduction in manual data entry and enhancing data accuracy.
- Leveraged **Amazon CloudWatch** for monitoring Lambda functions, employing custom metrics and logs analysis

Projects

Natural Language Drone Operation Platform | — February 2024 – Present

- Developed an innovative web application designed to support drone warfare efforts, significantly enhancing surveillance capabilities in conflict zones for **8VC Defense Hackathon**.
- Integrated an advanced **Language Model (LLM) from OpenAI**, reducing command processing time by 40% compared to traditional manual input methods, significantly streamlining user interaction.
- Implemented an AI-driven drone identification system utilizing a custom-trained **YOLOv5 neural network model** for real-time object detection and classification, ensuring a **95% precision rate** in diverse operational environments.
- Engineered a drone jamming feature using **HackRF** that successfully disrupted enemy drone communications in over **85% of test cases**, providing a strategic advantage in electronic warfare.

Machine Monitoring J&M 1 | — Sep. 2023 – Present

- Implemented a real-time machine performance monitoring system for J&M INC, reducing evaluation time by **40%**.
- Migrated data from legacy systems to **MySQL**, ensuring access and analysis of 3 years' worth of historical data.
- Developed a web application using**AngularJS**, handling users with a load tolerance of **500 requests** per second.
- Utilized **Git and GitFlow** for version control, managing collaborative development among a team of **10 engineers**.
- Implemented **Elasticsearch and Kibana** for real-time data visualization, enabling dynamic dashboards displaying **15 key** performance indicators (KPIs).

Technical Skills

Languages: Java, C/C++, Python, Swift, SQL, CSS/HTML, Typescript, JavaScript
Software Tools/Frameworks: BlueJ, IntelliJ, Anaconda, Jupyter, XCode, Visual Studio Code, MySQL, Flask, AWS, GCP, Kubernetes, Nginx, React, Postman, OpenCV, depthAI, TinyYolov4, PHP, Apache, LAMP, looker studio/tableau, Jenkins, Git, Git flow, Docker