SWETHA S MENON

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Summary

Computer Engineering Masters graduate student with 2+ years of work experience in developing solutions for data-centric applications looking for Software Engineer roles with proven competence in developing scalable AI models. In-depth knowledge of full-stack engineering to build interactive software frameworks to scale with experience in .NET, HTML, CSS, React, Mongo DB, Git.

Experience

Software Development Engineer (SDE), RedBus GoIbibo Pvt. Ltd. **Jun 2017 - Sep 2018**

- Key contributor to the successful revamp of the redBus website, achieving significantly faster rendering speeds through code migration using the React framework and implementing 'dynamic filters' for the booking platform that has a customer base of **36 million**.
- Played a pivotal role as a **full stack web developer** for the Business to Customer web team, driving website development, product features development and maintenance efforts for redBus website.
- Delivered a remarkable **10% improvement** in the conversion ratio of personalized features like Book Again - Book Return - Resume Booking Flow during ticket reservation.
- Utilized **Google Analytics tool** to continuously monitor and optimize the website's conversion ratio, ensuring a seamless user experience.
- Innovated novel product features and seamlessly deployed code to the production environment while proactively resolving production bugs enhancing significant improvement in web functionality and speed.
- Gained experience in **HTML5, CSS3, React.js, MongoDB, C#, .Net, SQL, Microsoft development tools, Windows operating system, Jira, Git, and Jenkins**.

Intern, **National Informatics Centre - Govt. of India** **Summer 2016**

- Assisted in the development of a **C++ module in QT framework** that seamlessly linked the System for Attumanal Neutral Distribution (SAND) project with a Point of Sale (POS) device, enabling efficient tracking of vehicles entering mining areas.
- Demonstrated expertise in system design, business process re-engineering, and technical documentation, contributing to the project's overall success.
- The project helped provide a groundbreaking solution to combat illegal sand mining from riverbeds, resulting in a remarkable **70% reduction** in such activities across the entire state of Kerala.

Publication

S.S. Menon, Dr. El.M.Sharkawy. Lidar based 3D object detection using Yolov8 and Euler Region Proposal Network-Under-Preparation,2024.

Skills

- **Programming Languages:** C++/C, C#, JavaScript, Python, React.js, HTML5, CSS3, Tailwind CSS, TypeScript, JSON.
- **CI/CD Tools and Frameworks:** PyTorch, OpenCV, MySQL, MongoDB, Google Analytics, CI/CD tools, Jira, GIT, OWASP, REST APIs, Agile, AWS, Kubernetes.

Projects

Key Frame-Based Video Summarization

- Led a team of 4 members to develop an algorithm focused on reducing the volume of any video by creating its summary.
- Used **Machine Learning** model for duplicate frame removal and stroboscopic imaging were the main techniques used in the work.
- **Machine learning** (OpenCV) model was used to detect car seat belts and helmets to check for traffic rule violations.

RideShare - Mobile Application

- Technology used: Android Studio, MySQL, Java.
- Developed an Android-based application called RideShare, that helps common people to share their rides with other travelers on the same route to the same destination.
- GPS tracking API was integrated to find out the real-time location of the riders.

Smart Blind Cane using Sensor Fusion

- Demonstrated exceptional leadership skills by overseeing a team of 3 individuals in the successful development of an obstacle detection circuit on an FRDM-K64 board.
- The circuit utilized ultrasonic sensors, a buzzer, and custom programming to achieve outstanding functionality.
- The sensors were custom programmed to activate at different frequencies based on the distance from the obstacle.
- The project resulted in a highly efficient obstacle detection system, showcasing the team's technical prowess and commitment to excellence.

Voice Command Controlled Automatic Door

- Designed and implemented a highly innovative circuit on an FRDM-K64 board to create a groundbreaking voice-controlled automatic door prototype, leveraging servo motors for seamless operation.
- Successfully integrated a Bluetooth module to establish a seamless connection with mobile devices, enabling voice commands for the automated door system.

Real-Time Lane Tracking with i.MX 8M Mini Processor

- Trained a machine learning model for real-time lane detection and tracking using OpenCV Python.
- The trained model was integrated into the NXP i.MX 8M Mini processor for real-time tracking.
- Our team received the **best course project** award for the work.

3D Object Detection with Sensor Fusion, Purdue School Of Engineering Technology.

- Developed a cutting-edge **deep learning model** by integrating sensor fusion techniques for **3D object detection**.
- Successfully enhanced the performance of the **YOLOv8 deep learning model** by creating a **new CNN architecture** and seamlessly incorporating data from lidar sensors, enabling fast and precise object detection for autonomous vehicles with a **performance enhancement measure of 88.53% accuracy.**

Education

Purdue School of Engineering Technology, Purdue University — Indianapolis-IN, USA
MS in Computer Engineering — June 2024

Government Model Engineering College — Kerala, India
B.Tech in Computer Science and Engineering — May 2017