

HARSHA KEERTHAN MUTHU KRISHNAN

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EXPERIENCE

MediaTek Full Stack Developer Intern 

May 2023 - Dec 2023

- **Web development:** Redesigned intranet websites and integrated **SSL encryption** using the **MERN stack** and **CMS**, enhancing user interface and security for over 50 chip designers, thereby improving workflow efficiency by 30%.
- **DevOps:** Established a local version control system and **automated CI/CD pipeline**, reducing deployment time by **75%** and significantly enhancing team collaboration.
- **Automation:** Developed **Python scripts** to utilize **RESTful API** services for **automating content synchronization** across Drupal websites, ensuring zero redundancy and improving data update efficiency.
- Tech Stack: Python, SQL, PHP, HTML, CSS, JS, Drupal, React, Express & NodeJS, RESTful & JSON API, Agile practices

Continental Automotive Embedded Software Engineering Intern 

May 2022 - Aug 2022

- **Engineered communication** between firmware and sensors by implementing UART interface to **reduced failure rates** to near zero using **Python Scripts**.
- **Demonstrated to Continental's Business Unit**, leading to successful production deployment and market launch.
- Used **3D motion technology** to capture machine learning data and stored it in **mongoDB** using **mqtt** for real-time analysis.
- Tech Stack: Python, C++, MQTT, CMake, ECal

PROJECTS

PopTrade

- Developed a web-based consumer marketplace, facilitating seamless buying and selling of products.
- **Implemented the backend logic using Flask and Python**, managing user accounts, product listings and search functions.
- Tech Stack: HTML, CSS, JavaScript, Flask, Python, MySQL

Data Analysis

- Analyzed bus driver datasets to compute safety scores using Python, improving data accuracy by 20%.
- **Visualized data statistics** using **Plotly** and **Dash frameworks**, through interactive dashboard.
- Tech Stack: Python, Dash, plotly

Portfolio Website

- Designed and developed a personal portfolio website using **Next.js**, **Tailwind CSS**, and **Framer Motion**.
- Tech Stack: NextJS, ReactJS, TailwindCSS, Framer Motion, Resend, Vercel, Umami Web Analytics

SITAtlas — Final Year Project

- Engineered a **web-based geospatial navigation system** using **Mapbox GL JS** to address complex wayfinding challenges in SIT's new Punggol campus integrating point of interest (POI) data using OpenStreetMap.
- Integrated an **AI-powered chatbot assistant** utilizing **OpenAI's GPT-4o model**, contextualizing responses with real-time geospatial data for intelligent user interactions.
- Designed and implemented a **robust CI/CD pipeline** with **GitHub Actions**, automating **Docker** image builds, security scans, and deployments to **DigitalOcean** infrastructure.
- Architected a **full-stack solution** using **Next.js** and **React** for the frontend, with **Node.js** and **PayloadCMS backend**, leveraging **MongoDB** for efficient storage and retrieval of **complex GeoJSON data**, ensuring a responsive, scalable application with optimized query performance for large-scale spatial information.
- Tech Stack: NextJS, NodeJS, MongoDB, Mapbox, PayloadCMS, GraphQL, NGINX, Docker, DigitalOcean

EDUCATION

Singapore Institute of Technology

Sept 2021 - Sept 2024

B.Eng with Honours in Computer Engineering

Specialisation in Intelligent Transportation Systems (Telematics)

CGPA: 4.59

SKILLS

Python, C++, JavaScript, HTML, CSS, Tailwind CSS, PHP, MySQL, React, Node.js, CMS, NextJS, MongoDB, Docker, NGINX

CERTIFICATIONS

Google Specializations
Cloud

Data Analytics, IT Automation with Python, IT Support Professional 
Google Qwiklab Badge: Create and Manage Cloud Resources (GCP & Kubernetes)