HARSHA KEERTHAN MUTHU KRISHNAN

+65 81134132 · m.harshakeerthan@gmail.com · LinkedIn · GitHub · Portfolio

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.
- Scripting: Developed Python-based system to utilize RESTful APIs, automating content synchronization across Drupal websites, ensuring zero redundancy and improving data update efficiency.
- Tech Stack: Python, SQL, PHP, Drupal, React, Express & NodeJS, RESTful & JSON API, Agile practices

Continental Automotive *Software Engineer Intern* — *May 2022 - Aug 2022*

- Engineered communication between firmware and sensors by implementing UART interface to reduced failure rates to near zero using Python.
- 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

SITAtlas — Final Year Project

- Engineered a **web-based geospatial navigation system** using Mapbox GL JS to address wayfinding challenges in SIT's new Punggol campus, developed with **Next.js, React, and PayloadCMS for a full-stack solution**.
- Integrated an **AI-powered chatbot 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** deployments to VPS.
- **Published a Conference Paper** on the project, accepted for presentation at the *2024 IEEE International Smart Cities Conference* (ISC2-2024).
- Tech Stack: NextJS, TypeScript, NodeJS, MongoDB, Mapbox, PayloadCMS, GraphQL, NGINX, Docker, DigitalOcean

FlightLogger

- Developed a flight log management system with **NextAuth for OAuth and JWT-based authentication**, implementing **role-based access control**, and leveraging **Next.js server actions** for efficient data handling.
- Tech Stack: Next.js 14, React, MongoDB, NextAuth.js, Tailwind CSS, Shadcn UI, TypeScript, Resend, Vercel

PopTrade

- Developed a web-based **ecommerce marketplace**, facilitating seamless buying and selling of products.
- Implemented the backend logic using **Flask and Python**, managing user accounts, product listings and search functions.
- Integrated **real-time chat** functionality for users using **Socket.IO**, enabling direct communication between buyers and sellers.
- Tech Stack: HTML, CSS, JavaScript, Python, Flask, Socket.IO, SQLite

Airport Taxi Demand Prediction System — *In Development*

- Developed a proof of concept for a machine learning system to predict taxi wait times at the airport.
- Implemented a real-time dashboard with Next.js, **data ingestion pipelines using Apache Kafka** and built dynamic predictive **model with scikit-learn**, enabling flexible forecasting based on varying time frames.
- Tech Stack: Apache Kafka, scikit-learn, Next.js, Supabase, PostgreSQL, Python, TimescaleDB, Docker, Dev Containers

EDUCATION

Singapore Institute of Technology — *Sept 2021 - Sept 2024*

B.Eng with Honours in Computer Engineering
Specialisation in Intelligent Transportation Systems (Telematics)
GPA: 4.57 — First Class Honours

SKILLS

Python, C++, TypeScript, React, NextJS, Node.js, MongoDB, PostgreSQL, Docker, CI/CD, NGINX, Authentication & APIs

CERTIFICATIONS

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