Claudiu Jipa

jipacf@gmail.com | linkedin.com/in/claudiu-jipa |github.com/jipelski

Skills

Languages: Python, MicroPython, JavaScript, C, C++, SQL (PostgreSQL, MySQL, SQLite)
Backend: FastAPI, Pydantic, REST, MQTT, Kafka, Redis
Tools: Docker, Docker Compose, Git, Linux, LoRaWAN, Bluetooth/BLE

Experience

Software Engineer, DIREK LTD – Guildford Dec 2024 – Present

- Extended a Dockerised FastAPI Pydantic microservice to onboard 12 new device models; consumed raw MQTT, validated/normalised vendor-default payloads into the platform event schema, and published events to Kafka feeding storage, analytics, and alert-detection services.
- Built a separate Python microservice to integrate 9 external sensor data providers by subscribing to external MQTT topics and polling REST APIs; transformed disparate formats into the same standard event schema and republished to Kafka for downstream processing.
- Designed and programmed two MicroPython-driven Dagu Wild Thumper robots to automate occupancy-sensor benchmarking; increased throughput 8x (30 to 240 tests per hour) and improved repeatability by removing manual variance.
- Built a FastAPI microservice for remote device provisioning and configuration, enabling customer self-serve installs and removing the need for on-site engineer visits.
- Expanded device support to LoRaWAN by validating end devices and standing up an in-house LoRaWAN network, enabling low-power battery sensor integrations.

Software Engineer Intern, DIREK LTD – Guildford Oct 2024 – Dec 2024

- Increased room-booking accuracy from 65% to 95% by developing a FastAPI Python microservice that correlates live IoT occupancy signals with Outlook calendar events via Microsoft Graph API.
- Reduced premature booking releases to 5% by implementing a Redis TTL-based grace window that tolerates late starts and brief vacancies.
- Addressed Graph webhook limitations for recurring meetings by combining push notifications with targeted delta queries, eliminating missing future instances of recurring events.

Software Developer Intern, University of Essex – Colchester Jan 2023 – May 2023

- Built a vanilla JavaScript daily-puzzle web app to showcase the Mathematics Department's new puzzle algorithm; reached 400 daily logins in the first month.
- Implemented responsive layouts for desktop, tablet, and mobile to maximise device compatibility.

Projects

Smart Home github.com/jipelski/smart-home

- Open-sourced a three-layer indoor air-quality platform (sensor firmware, Python gateway, FastAPI backend) packaged as ready-to-run Docker images; averaging 70 GitHub views/week.
- Built end-to-end multi-room telemetry streaming and dashboarding; processes 5760 samples/device/day and eliminated manual readings.
- Documented a plug-and-play Raspberry Pi Pico W BLE driver and Bosch BME688 wiring guide, enabling new users to bring up devices in under 15 minutes.

Education

University of Essex – MS in Computer Science Dec 2023
University of Essex – BS in Computer Science July 2022