

Mateusz Nowak

Software Engineer · Python · Backend · Systems integration

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Profile

Software engineer since 2016, focused on Python, backend development and systems integration. My experience spans network automation, scientific data pipelines and cloud-based automotive test systems, with work across services, client applications and web interfaces.

I enjoy understanding protocols, tracing problems across system boundaries and building the missing pieces. Python is my main language; I also work with Rust and TypeScript, with a background in embedded C/C++ and mechatronics.

Professional experience

Cisco

2021 – present

Software Engineer · Python

Software for remote access, network diagnostics and infrastructure automation.

- Develop features spanning client applications, backend services, web interfaces and cloud components.
- Work on integration, security-related functionality and troubleshooting across the system, depending on the feature being developed.
- Build and maintain Python services and APIs, asynchronous communication and user-facing functionality.

Technologies: Python · Rust · FastAPI · asyncio / anyio · SQLAlchemy · Redis · MongoDB · Docker · Kubernetes · TypeScript · Vue.js · GitLab CI / GitHub Actions

Roche / Genentech

2020 – 2021

Python Tech Lead

Data-processing platform supporting researchers in early drug development.

- Developed backend services and pipelines to ingest raw data from laboratory instruments, including mass spectrometers used in proteomics.
- Containerized computational workloads and enabled their execution on an on-premise HPC cluster; integrated outputs with downstream analysis workflows.
- Worked on a laboratory work scheduler and the web applications around research data processing.

Technologies: Python · Pyramid · Django · SQLAlchemy · Celery · aiohttp · Docker · HPC · NiFi · Jenkins · Ansible

Professional experience – continued

ZF Automotive Systems

2016 – 2020

Software Engineer · Python & Embedded

Cloud-based test infrastructure, driving-data processing and hardware automation, following earlier embedded work.

- Worked on a cloud-based system for scheduling and monitoring tests across HIL and SIL infrastructure.
- Developed ingestion and management of recorded driving data, parallel test scheduling for reinjection HILs, and collection of feature-quality KPIs.
- Automated test equipment in Python, including debuggers, Vector interfaces and relay cards; maintained drivers in a shared test framework.
- Delivered internal training in Python, unit testing and Git.
- Earlier work included multi-collision braking in an automotive ECU and hardware work with CAN, FlexRay and Ethernet communication.

Technologies: Python · Django / DRF · Celery · AMQP · Docker · OpenShift · MinIO / S3 · Angular / React · C/C++ · AUTOSAR · RTOS

Technical Assistant · Częstochowa University of Technology · December 2015

Provided technical support for a professor's microalgae cultivation project, helping with day-to-day culture maintenance and project documentation.

Technical skills

Backend & data: Python, Rust, asynchronous programming, FastAPI, Django / DRF, SQL, SQLAlchemy, Celery, Redis, MongoDB

Systems & delivery: API integration, Docker, Kubernetes, data pipelines, HPC workloads, Linux, Git, CI/CD, hardware automation

Additional experience: TypeScript, Vue.js, Angular, React; embedded C/C++, automotive communication and test equipment

Education

B.Eng. in Mechatronics

2013 – 2017

Częstochowa University of Technology · Electronic control systems

Built a SCARA robot and a Qt-based IDE for programming it in JavaScript, using C++ and a Siemens S7 PLC. First place, “Young Constructor” category, KOKOS 2016 national student engineering competition.

Projects & open source

- **Smort Query:** Lazy queries over Python objects, inspired by Django QuerySets.
- **Small EOD:** Backend contributions to a document workflow application for Sieć Obywatelska Watchdog Polska, using Django and DRF.
- **Microclimate controller:** A Raspberry Pi system with sensors and actuators for controlling mushroom-growing conditions; Python, asyncio, C++ and Qt.

Recruitment consent. I consent to the processing of personal data voluntarily provided in this CV, beyond the data required by applicable law, for the purposes of the recruitment process in which I submit this application.