Jakub Koszyka

Embedded Software Engineer | Embedded Linux & UAV Systems

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SUMMARY

Embedded Software Engineer specialising in **embedded Linux for unmanned aerial vehicles (UAV / drones)**: custom **Yocto** distributions, **Linux kernel drivers**, radio-link software and build automation. Also builds **full-stack, data-oriented applications** and rocket software in a student space-engineering club. Certified EU A1/A3 drone operator and FPV pilot who tests his own code in the air.

EXPERIENCE

Embedded Software Engineer 01/2026 – Present (11 mos)
DefendEye Kraków, Poland

- Develop and maintain a custom **Yocto Project / BitBake** embedded Linux distribution (layers, recipes, Board Support Package) for a **TI AM62A7**-based drone flight computer, from bootable image to deployment on live aircraft.
- Maintain an out-of-tree **Linux kernel driver** in C for the **Realtek RTL8812CU** 802.11ac Wi-Fi chipset carrying the drone-to-ground-station video and telemetry link.
- Developed **binding-agent**, a daemon on both drone and ground station that coordinates migration of the radio link from the default channel to a selected operating channel.
- Built **ti-yocto-ui**, a web dashboard that turns firmware image builds into a self-service workflow: engineers and flight testers trigger, track and download builds without manual steps.
- Created the Raspberry Pi ground-station image pipeline and lead its migration to **Yocto**, unifying reproducible builds across the air and ground segments.
- Integrate **TI Edge AI GStreamer** pipelines for real-time on-board video inference and develop the agent connecting ground stations to the cloud web application.

Full-stack Developer 09/2024 – Present (2 yrs 3 mos)
Datali Zurich, Switzerland

- Built and maintain the company website.
- Develop **full-stack, data-oriented web applications**, from database schema and backend APIs to the interfaces that present the data.

Software Engineer – Rockets Division 08/2024 – Present (2 yrs 4 mos)
AGH Space Systems Kraków, Poland

- Develop software as part of the Rockets Division software team in AGH's student space-engineering science club.

SKILLS

Embedded & UAV: Embedded Linux, Yocto Project, BitBake, OpenEmbedded, Board Support Package (BSP), Linux kernel modules, device drivers, cross-compilation, GStreamer, TI Edge AI SDK, ArduPilot, TI AM62A7 (Arm Cortex-A53), Raspberry Pi

Networking & Radio: Wi-Fi (IEEE 802.11ac), Realtek RTL8812CU, radio link management, Linux networking

Programming: C (embedded), Go, Rust, Python, TypeScript, Java, C# / .NET, Bash

Backend & Data: Node.js, Nest.js, Next.js, FastAPI, Django, REST, GraphQL, PostgreSQL, Prisma, pandas, PyTorch

DevOps & Tools: Docker, Kubernetes, Git, Linux (Arch), Neovim, Playwright, Vitest

Languages: Polish – native, English – full professional (C1), Norwegian (Bokmål) – limited working

EDUCATION

B.Sc. Eng. – Electronics and Telecommunications – AGH University of Krakow 10/2026 – 09/2030 (expected)

M.Sc. – Social Informatics (AI & Data Science) – AGH University of Krakow 10/2024 – 07/2026

B.Sc. – Social Informatics – AGH University of Krakow 10/2021 – 07/2024

CERTIFICATIONS

EU UAS Drone Operator – A1/A3 | AWS Cloud Foundations | IBM Back-End Development (Python) | Amazon Software Developer (Java)