

Gleb Stachev

Embedded Engineer

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github.com | [LinkedIn](#) | [Portfolio](#)

SUMMARY

Results-driven Engineer with expertise in developing autonomous systems, IoT devices, and embedded software (Python, C++, JS). Proven track record of taking complex hardware projects from concept to functional prototype, including PCB design, CAD enclosure modeling, and high-performance backend development for real-time data processing. Specialized in radio-frequency (RF) detection systems and UAV flight platforms.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript.

Hardware & IoT: ESP32, Raspberry Pi Pico, UART, SPI, I2C, PWM, I2S (Audio Streaming).

Engineering: PCB Design (DipTrace), CAD Modeling (FreeCAD), 3D Printing (PETG/PLA prototyping).

Software & Computer Vision: Flask, FastAPI, Tkinter, PostgreSQL, SQL, Firebase, WebSockets.

TECHNICAL PROJECTS

Cerebro: Analog Video Scanning System | 2023 – 2026

- Developed a specialized hardware detector based on **Raspberry Pi Pico (Micropython)** for real-time interception and display of analog video feeds.
- Engineered the system to bypass false RF triggers, focusing exclusively on valid analog video signals across **1.2 GHz, 2.4 GHz, 3.3 GHz, and 5.8 GHz** bands.
- Designed a custom **PCB** and a ruggedized field enclosure using **FreeCAD** and 3D printing (PETG).
- Implemented I2C communication protocols to transmit detected frequency data.

High-Endurance Multi-Device Audio Streaming System | 2025 – 2026

- Engineered a scalable **multi-device architecture** based on **ESP32 (C++)**, capable of simultaneous real-time audio streaming from multiple devices.
- Optimized firmware for **I2S** digital microphones and **WebSockets**, ensuring stable 16-hour continuous data flow with minimal power consumption per device.
- Developed a robust backend using **Python** and **FastAPI** to handle concurrent high-bandwidth audio streams and synchronized data logging.
- Integrated a centralized management interface to monitor device health and frequency data across the entire network using JavaScript UI.

Heavy-Lift Long-Endurance FPV Platform | 2024 – Present

- Engineered and calibrated a heavy-lift FPV drone platform designed for **extended flight times** and specialized payloads.
- Optimized power distribution and motor efficiency to maximize battery life for long-range reconnaissance.
- Managed complex system integration, including flight controller tuning and high-gain antenna systems for stable signal transmission.
- Designed and modeled a custom 3-axis brushless camera gimbal from scratch using FreeCAD, optimized for a 30x zoom AV camera.
- Developed an onboard multi-camera system featuring dual frontal flight cameras with a 90-degree dynamic tilt capability (forward to downward view) and a third gimbal-stabilized camera.
- Implemented a PWM-controlled video switch to enable real-time, low-latency pilot switching between video feeds.

AI-Powered Ground Control Video Station | 2025– Present

- Developed a high-performance video monitoring application optimized for real-time, low-latency processing of analog video feeds via UVC/ADC hardware capture devices, screen captures, or external digital cameras.
- Integrated a real-time computer vision pipeline utilizing YOLO (ultralytics) models directly into the video stream for automated target detection, object classification, and stream filtering.
- Engineered a highly responsive and customized user interface (live digital zoom, brightness, contrast, sharpness adjustments, and a dedicated black-and-white mode).

EXPERIENCE

Corporal Ukraine
National Guard of Ukraine 05/2015 - 05/2016

- K9 unit.

Freelance Embedded & RF Engineer | Self-Employed Eilat - Tel Aviv, Israel
2023 – Present

- **Cerebro (R&D)**: Designed an analog video reconnaissance system, managing the full lifecycle from custom PCB design to ruggedized field enclosure fabrication.
- AI-Powered Ground **Control Video Station**.
- **FPV drone platform**: engineering and calibrating, 3d parts creating.

Embedded Engineer Wroclaw, Poland
JUPI plus (remote) jupiplus.com 10/2025 - Present

- **Audio Streaming System**: Engineered the ESP32-based multi-device architecture for high-endurance real-time streaming.

Full Stack Developer Vinnytsia, Ukraine
JUPI plus (remote) jupiplus.com 06/2023 - 10/2025

- **Educational Web Portal**: Developed a custom portal for a U.S.-based organization, streamlining management for thousands of users and educational chapters (Implemented scalable SSR architectures and RESTful APIs to handle complex administrative workflows.).

EDUCATION

Full Stack Web Development, Python and JavaScript program Tel Aviv, Israel
Developers Institute, TLV Coding Bootcamp 11/2022 - 05/2023

Master's degree Vinnytsia, Ukraine
Vinnytsia Institute of Trade and Economics 06/2009- 06/2014
of State University of Trade and Economics

LANGUAGES

Ukrainian, Russian: native speaker, **Hebrew**: fluent, **English**: intermediate