Oleksandr Maslov

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Kreittmayrstraße 6, 80335 Munich | Born 21.07.2007 in Kyiv, Ukraine

PROFILE

Motivated applicant for an Ausbildung as Fachinformatiker Anwendungsentwicklung with a focus on embedded systems, with strong school results in Computer Science (12/12), Physics (12/12), and Mathematics (10/12). I develop my own firmware and hardware projects with C, Python, Zephyr RTOS, ZMK, and ARM-based microcontrollers -- from concept through schematic, PCB, and firmware to prototyping, testing, and technical documentation. Projects: Kerfur | Wafer

SKILLS & INTERESTS

C / Embedded C | Zephyr RTOS | ARM Cortex-M (nRF52/53/54) | BLE / Bluetooth Low Energy | Hardware-Software Integration | Git / GitHub / Open Source | PCB Design (KiCad) | Testing & Debugging

SELECTED TECHNICAL PROJECTS

Kerfur -- Embedded Application on nRF52840

10,000+ LoC ↗ Link

Personal project | 2025 -- ongoing

- Event-driven firmware on nRF52840 with Zephyr / Nordic Connect SDK, 10,000+ LoC C, structured around a central message-queue event bus
- **Behavior engine** with pet modes, expression scoring, afterglow and micro-reactions, using hysteresis on confidence thresholds for stable intent resolution
- **Motion stack on an LSM6DSO IMU** -- wake-on-motion and tilt, walking confidence with step batching, pickup and in-hand detection, tilt-driven dynamic pupils, shake and impact classification
- **Face rendering on an SSD1306 OLED via LVGL** -- pupils, blinking, micro-reactions and overlays; display policy with foreground / ambient / off states, ambient pixel shift and self-wake scheduling
- **BLE peripheral** -- iOS notifications via ANCS, Android via ANS fallback, optional Gadgetbridge companion channel; Kerfur-to-Kerfur nearby beacons with rotating ephemeral IDs for peer encounters
- **Build and debug tooling** -- Python face-asset codegen (JSON + SVG → C, run from CMake) and USB CDC shell for BLE, face and nearby debugging; configuration via Kconfig and Devicetree

C, Zephyr RTOS, nRF52840, BLE, LVGL, IMU, Devicetree, Kconfig

Wafer -- Split Keyboard

Hardware + Firmware ↗ Link

Personal project | 2025

- 36-key ultra-thin split keyboard with approx. 4-8 mm build height; aluminum case with magnetic mechanism
- Custom PCB in KiCad with ISP1807 (nRF52840 module), NPM1300 PMIC, and Sharp LS0xx display
- Power routing configured in Devicetree (buck rails, display LDO, GPIO-controlled external power switch)
- Developed a custom register-based I2C driver for the NPM1300 PMIC for direct battery-voltage readout, and integrated it into the battery-reporting logic of a ZMK fork ↗ source

ZMK, Zephyr, KiCad, Devicetree, Driver Modification

ZMK Modules & Open-Source Contributions

Firmware

Firmware development | 2025

- **zmk-pointing-acceleration** -- public ZMK input processor for smooth, configurable pointer acceleration on trackpads and pointing devices. Currently ★ 25 / ⑂ 10 on GitHub ↗ Link
- **zmk-soft-off-wake-delay** -- long-press wake module for safe wake behavior from SOFT-OFF state ↗ Link
- **zmk-input-gestures** -- code contributions and tests ↗ Link

C, ZMK, Zephyr, Git, Code Review

Acceleration Configurator

Streamlit Tool ↗ Link

Tooling | 2025

- Streamlit web tool for interactively tuning and visualizing pointer-acceleration curves
- Generates ready-to-use Devicetree (`.dts`) snippets from the chosen configuration, so users can drop them straight into their ZMK keymap

Python, Streamlit, Devicetree

Tactical Flashlight -- Energy for Ukraine Volunteer ↗ Link

Volunteer | since 12/2025

- Fully developed the firmware in C for an ARM Cortex-M0 microcontroller (PY32F002A)
- Two light modes with saved brightness, SOS function, battery-level indication via addressable LEDs
- Fully designed the schematic of the prototype as the basis for the PCB layout
- Reviewed the final design and prepared the prototype for production in China

C, ARM Cortex-M0 (PY32F002A), KiCad, Electronics

OPEN SOURCE / COMMUNITY

Hack Club / Blueprint & GitHub Projects ↗ Link

Community and open-source work | 2025 -- present

- Exchange with other developers on PCB, firmware, input systems, and prototyping
- Public documentation of own projects and structured work with Git and version control

WORK EXPERIENCE

Brionel, Ukraine

Oct 2023

Freelance -- Digital Catalog & Graphic Design

- Designed an interactive digital product catalog with structured layout and visual consistency
- Created product flyer layouts and visual documentation in Figma, applying systematic design methods and attention to detail

EDUCATION

Studienkolleg Vorkurs Munich — Jan 2025 -- Jun 2025

Academic preparation for university admission in Germany

German B2 Professional Communication Course — Oct 2024 -- Mar 2025

Intensive German for professional contexts

Ukrainian Secondary School -- Full Diploma — Completed 2024

Computer Science: 12/12 | English: 12/12 | Physics & Astronomy: 12/12 | Chemistry: 12/12 | Mathematics: 10/12

TECHNICAL SKILLS & LANGUAGES

Programming: C, Python **Embedded:** Zephyr RTOS, ZMK, ARM Cortex-M, nRF52/53/54, Arduino, ESP **Protocols:** BLE, I2C, SPI, PWM, ADC

Hardware: KiCad, Schematic & PCB Design, Prototyping **Tools:** Git, GitHub, Devicetree, Kconfig, Structured Debugging & Testing

Languages: German B2 | English B2-C1 | Ukrainian (native) | Russian (native)

Munich, April 14, 2026