

# C++ Developer

## HARD SKILLS

### Programming Languages

- C++, C, Python

### Tooling & Platforms

- Linux (Ubuntu/WSL), Git/GitHub, CMake, GitHub Actions (CI/CD)

### Frameworks & Libraries

- STL, SFML, Gurux.DLMS, FastAPI

### Testing & Documentation

- GoogleTest, AUnit, Doxygen

### Protocols & Networking

- DLMS/COSEM, HDLC/Wrapper, TCP/IP (sockets), UART/RS-232/RS-485, COM over TCP, MQTT

### Core CS / Engineering

- OOP, Data Structures & Algorithms, Complexity, Design Patterns, Multithreading & synchronization

## SOFT SKILLS

- Analytical thinking
- Problem-solving & resilience
- Self-learning
- Attention to detail
- Technical communication
- Goal orientation & organization
- Teamwork & collaboration

## Languages

- Ukrainian - Native
- Russian - Fluent
- English - Intermediate
- Czech - Beginner

# OLEKSANDR HERBEI

## ◆ Personal Projects

### • Embedded Linux Device Simulator

Built a modular embedded device simulator in C++20 with a custom FakeCPU/ISA, MemoryBus, and strict MMIO contracts. Implemented a peripheral ecosystem (GPIO + virtual LED/Button, UART/Timer) driven by YAML board configs for deterministic, reproducible simulations. Delivered a testable CLI workflow (monitor/press), CI-backed builds/tests, and spec-level documentation to keep the platform extensible.

### • Smart meter simulator

Developed a C++ smart electricity meter simulator with full DLMS/COSEM (IEC 62056) support, including OBIS object modeling and a TCP server communication layer. Implemented multithreaded, real-time data generation and a custom CLI to launch and manage multiple meter instances across dynamic ports. Designed the system for scalable testing and deployment-like scenarios.

### • Tic-Tac-Toe Game Arduino

Engineered a split client-server Tic-Tac-Toe system over UART: a desktop C++/SFML client and an Arduino Uno backend responsible for all game logic, AI moves, and LED feedback. Established GitHub Actions CI/CD with mocked UART tests, automated binary builds, and Doxygen documentation for both codebases. Focused on clean separation between UI, transport, and embedded logic.

### • Smart menu

Built a personal meal-planning web app using FastAPI and PostgreSQL, delivering REST APIs for meals, weekly menus, and automatic grocery list generation. Deployed the database on Railway and maintained delivery via GitHub-based CI/CD and versioned workflows. Structured the backend modularly to support future scaling and feature expansion.

## ◆ Education

- Lviv Polytechnic National University Bachelor of Computer Engineering (2021-2025)



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