Borcea Alexandru

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SUMMARY

Third-year Systems Engineering student at University POLITEHNICA from Bucharest, with a strong focus on Embedded Systems and IoT. Proficient in C/C++ and Python, with solid knowledge of Operating Systems, Digital Electronics and Real-Time Application Programming. Passionate about integrating software and hardware to develop efficient and reliable embedded solutions.

EDUCATION

Oct 2023 - Jul 2027   Bachelor's Degree at **Faculty of Automatic Control and Computer Science**
Sep 2019 - Jun 2023   High School Diploma at **Colegiul National "Ferdinand I" Bacau**

WORK EXPERIENCE

Service Technician - Electronic Suport Division   June 2025 - September 2025

I performed diagnostics, repairs, and maintenance on a wide range of electronic and household devices, including washing machines, dryers, dishwashers, TVs, headphones, speakers, and cameras. I worked with multiple brands to deliver fast, reliable, and high-quality service, covering both hardware and software issues. Committed to precision repairs and customer satisfaction.

PROJECTS

Online Theatre Platform (Ticketing and Management)   Nov 2025 – Jan 2026

- Developed a full-stack ticketing solution with real-time seat availability and multi-user support.
- Engineered concurrency-safe reservations using ACID transactions to prevent double-booking and schedule conflicts.
- Built an admin dashboard featuring Role-Based Access Control (RBAC), CRUD operations, and automated PDF invoicing.

Monthly Budget Management Application   Nov 2026 – Mar 2026

- Developed a modular desktop application in Python using Tkinter and openpyxl for automated monthly budget tracking and Excel report generation.
- Implemented a JSON-based template management system to automatically generate, track, and deduplicate recurring fixed expenses.
- Automated the categorization of expenses into predefined weekly intervals to instantly generate structured spreadsheet summaries.

Real-Time Multi-Zone HVAC System (HeatMeUp)   Nov 2025 – Dec 2025

- Engineered a concurrent FreeRTOS Arduino system for real-time sensor and UI management.
- Implemented a P-controller for PWM heating and relay cooling using MAX6675 data.
- Designed a lock-free shared state with automatic actuator shutdown during sensor failures.

CERTIFICATIONS

Certificate in Advanced English	University of Cambridge
Networking Basics	Cisco Networking Academy
Fundamentals of Accelerated Computing with CUDA Python	NVIDIA Deep Learning Institute
CS50's Introduction to Programming with Python	HarvardX (in progress)

SKILLS

Technical Skills: C/C++, Python, SQL, MATLAB, Git, Linux, VS Code, Networking, Embedded Systems
Soft Skills: Problem-Solving, Analytical Thinking, Teamwork, Fast Learning