

# 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

**Logo Similarity Detection** Mar 2025 – Apr 2025

- Developed a Python application to compare and analyze logo similarity using image processing techniques.
- Implemented algorithms to detect and quantify visual differences between logos, supporting brand recognition and copyright analysis.
- Utilized libraries such as OpenCV and scikit-image and ORB for feature extraction, matching and clustering.

**Perpetuum Contest – Automated Trap Parking System (Team Project)** Apr 2025

- Designed and implemented an Arduino-based automated parking “trap” for intruder capture in the LSAC Perpetuum contest.
- Built real-time embedded control in C using ultrasonic distance sensing to detect vehicles and orchestrate servo barriers, buzzers, and LED indicators.
- Integrated multi-sensor hardware and firmware into a reliable autonomous system; validated end-to-end operation through team collaboration.

**LAN Party Project** Apr 2025

- Developed a sports competition management system using lists, queues, stacks, and BSTs.
- Processed team data from an input file, eliminating lowest-scoring teams to form a power-of-two bracket.
- Simulated knockout matches, determined winners, and generated a final ranking of top 8 teams.

## 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, Git, Linux, VS Code, Networking, Embedded Systems

Soft Skills: Problem-Solving, Analytical Thinking, Teamwork, Fast Learning