

# Borcea Alexandru

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## SUMMARY

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Third-year Systems Engineering student at University POLITEHNICA from Bucharest, with a strong focus on Embedded Systems and IoT. Proficient in C/C++, 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

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

## WORK EXPERIENCE

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**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

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**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

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| 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

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