Andrii Bessarab

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🧠 SKILLS

Programming Languages
Java, Python, C++, C, JavaScript, SQL

Concepts
Software Architecture, SDLC, OOP, Algorithms, Data Structures, Embedded Systems, Robotics, 3D Printing, Testing, CI/CD, Databases, Scalability & Security, UX

Web Development
React.js, Node.js, Flask, Django, Heroku, HTML, CSS, SCSS, JSON, PostgreSQL, Bootstrap, RESTful APIs

Hardware
Soldering, Arduino, Electronics Hardware Design, Measuring Tools

Tools
Git, GitHub, Figma, Heroku, Onshape, SOLIDWORKS, AutoCAD, Ultimaker Cura, Excel

Core Competencies
Team Leadership, Project Management, Team Work, Communication, Problem Solving

💼 RELEVANT EXPERIENCE

Competetive Programming Tutor   08/2025 – Present
- Provided paid tutoring services to high school students preparing for the Canadian Computing Competition (CCC).
- Developed custom practice materials and provided personalized instruction in Java, C++, and algorithms.
- Strengthened skills in teaching, communication, and problem-solving while helping students prepare for the contest.

Country Day School

Robotics Lead Programmer & Student Coordinator, FRC Team 4951   11/2022 – 05/2025
- Led the development of a highly automated codebase in Java, successfully implementing computer vision for field localization with AprilTags and autonomous path-following software.
- Engineered a custom competition-grade controller that improved control system efficiency.
- Mentored junior programmers, assuring the team's success in the years to follow.
- Assisted in designing through Onshape and served as a backup for mechanical team.

Coding Club Co-founder & Mentor   11/2023 – 03/2024
- Co-founded and led a coding club that mentored middle school students with no prior experience.
- Developed and implemented a Python curriculum that guided students from fundamentals to creating a text-based game.
- Honed skills in curriculum design, public speaking, and mentoring while managing the club's operations.

📁 PROJECTS

Custom Robotics Controller   02/2025 – 05/2025
- Designed and built a custom "Operator Board," including design, soldering, and C++ firmware.
- Improved robot control by creating an intuitive interface with large number of actuators on a custom layout.
- The controller was successfully deployed and used throughout our record-breaking season.

AI-Powered Character Learning in Unity   03/2021 – 05/2021
- Programmed a neural network and used a genetic algorithm to teach an AI stickman to walk.
- Successfully trained the AI to cover 100 meter distance by running a simulation for around 1000 rounds.
- Gained a foundational understanding of machine learning and AI.

PyPI Package Uploading UI   07/2020 – 12/2020
- Created a full-stack web application to simplify the process of publishing Python packages.
- Automated creation of mandatory files and distribution commands by integrating with GitHub and PyPI APIs.
- Streamlined the distribution process for developers, reducing the time from hours to just a few minutes.

3D Multiplayer Tic-Tac-Toe   04/2023 – 05/2023
- Engineered a full-stack web application using React, Three.js, and Flask with a Postgres database.
- Developed a real-time multiplayer mode and a challenging single-player mode with an unbeatable AI.

🎖 CERTIFICATES

- Harvard's CS50 Professional Certificate in Computer Science for Web Programming

- Harvard's CS50x: CS50's Introduction to Computer Science

- Harvard's CS50T: CS50's Understanding Technology

🏆 AWARDS

Canadian Computing Competition: Distinction, Senior Division & Perfect Score, Junior Division, *University of Waterloo*   2025

Computer Science & Engineering Highest Mark Achievement, *Country Day School*   2025

AP Scholar with Distinction, *The College Board*   2025

Academic Distinction, *Country Day School*   2025

Finance Operation Research Provincial Finalist, *DECA Ontario*   2023

🎓 EDUCATION

University of Waterloo, *Bachelor of Applied Science, Honours Mechatronics Engineering, Cooperative*   2025 – 2030

Country Day School, *Ontario Secondary School Diploma*   2021 – 2025