

Jacob Barbulescu

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EDUCATION

Stevens Institute of Technology | Hoboken, NJ

Expected December 2026

Bachelor of Computer Science | Lawrence T. Babbio '66 Pinnacle Scholar

Relevant Coursework: Data Structures and Algorithms, Discrete Structures, Systems Programming, Permutation and Combination, Computer Human Interaction, Differential Equations and Modelling, Mobile Development, OOP, Computer Architecture

Awards: Reno Del Ben 1958 Endowed Scholarship, Edwin A. Stevens Scholarship, Stevens Presidential Scholarship

GPA: 3.97 | **Involvement:** Pinnacle Scholar Peer Advisor, Stevens Game Development Club

WORK EXPERIENCE

Stevens Institute of Technology | *Undergraduate Research Assistant for Oregon Road 83* | Hoboken, NJ

June 2024 – August 2024

- Integrated an FMOD-powered adaptable audio system that dynamically combined the musical motifs of 34 player companions.
- Collaborated with a cross-functional team of 12 members to develop a moderately scaled, multidisciplinary video game.
- Helped delegate 62 SFX and music events to members of the audio team and met with them weekly to maintain progress.
- Used GitHub to organize workflows and version control, ensuring seamless integration of contributions and project milestones.

Mathnasium | *Lead Instructor & Salesman* | Hoboken, NJ

September 2023 – Present

- Conducted 12-month tenured sales with over 20 clients, amounting to over \$90,000 of total incoming revenue.
- Contracted with 6 public and private schools across Hoboken servicing 103 students under the Mathnasium Aftercare Program.
- Facilitated a custom GPT model's implementation into the instructor workflow to improve tutoring accuracy and efficiency.
- Assess, enroll, and train new instructors to maintain company values. Delegate tasks and tutoring sessions to instructors.
- Organize student information through Radius (in-house data management system). Manage 292 active student accounts engaging in around 20-hour workweeks.

The Climate Reality Project | *Lead Website Developer* | Sparta, NJ

May 2021 – September 2021

- Developed an online article database for the Climate Reality NJ Youth Chapter where members could create and upload educational climate change resources and users could search for, filter, and read the content.
- Integrated TinyMCE to allow Climate Reality members to write and save content on the web server itself, organizing multiple workflows and allowing for continuous, automatic updates to the website from each individual member.
- Implemented Node.js to facilitate all user-server interactions, from content searching to content creation. Used a Linux server to host the source code and user-generated content, as well as set up the domain and HTTP requests.

PROJECTS

Barbusoft Computer

December 2024

- Designed a 16-bit CPU in Logism Evolution capable of running precompiled scripts in a custom-built language.
- Organized conversion of script files to CPU actions as well as the data transfers between the CPU and two RAMs.
- Developed an assembly language with a python-based compiler for the CPU. Implemented 6 distinct instructions, use of registers and immediate numbers, and reading and writing from RAM.

Algorithms Study

October 2024 – December 2024

- Studied, implemented, and analyzed 28 algorithms in C++ via a Linux Virtual Machine. Examined the theoretical runtimes of recursive and nonrecursive algorithms within the Big-O framework to compare different solutions of the same problem.
- Implemented solutions to problems such as sorting and graph traversal. Explored algorithm methodologies such as greedy algorithms and iterative algorithms to find the most time-efficient solution to a given problem.
- Leveraged spatial locality, binary bit shifting, and divide and conquer strategies to implement more efficient algorithms.

Deck Thrower

October 2024

- Developed a Unity-based 2D video game for a weekend-long Game Jam. Won second place at the Game Jam.
- Leveraged object-oriented programming principles to organize the distinct objects into highly modular, modifiable collections of components. Implemented game managers to abstract complex internal processes to simplify the workflow.
- Utilized component-based asset organization to have different objects combine the same components in unique ways to generate unique behaviors with minimal resource creation, significantly decreasing development time.

SKILLS AND CERTIFICATIONS

Programming Languages: Python, Java, JavaScript, Bash, SQLite, OCaml, C, C++, C#, HTML, CSS

Developer Tools: Excel, GitHub, Node.js, Android Studio, Three.js, TinyMCE, OpenGL, SDL2, PowerPoint, FMOD, Unity, FL Studio

Technical Skills: Object-Oriented Programming, Data Management, Mobile and Web Development, Audio Production

Certifications: Excel Essential Training (LinkedIn Learning), Github Essential Training (LinkedIn Learning), Three.js Essential Training (LinkedIn Learning), Unity Specialist (LinkedIn Learning)