

# Jacob Langlois

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## EDUCATION

### Northeastern University

May 2026

*Honors Candidate for Bachelors of Science in Computer Science and Mathematics*

*Current GPA: 3.95/4.0*

Coursework: Fundamental of Computer Science (I & II), Discrete Structures, Mathematics of Data Models

Awards: Northeastern University Honors Program, Dean's List (2x)

Clubs Alpha Kappa Psi, Oasis, Northeastern Electric Racing, NEU Rock Climbing

## EXPERIENCE

### Software Engineer Intern

May 2023 – Present

*Software Engineering Institute | Carnegie Mellon University*

*Pittsburgh, PA*

- Lead the development of Ovilus, a real-time cyberwarfare training and simulation observation engine, utilizing SignalR C#, HTML, CSS, and JavaScript to animate cyber exercises and highlight key decisions and outcomes
- Developed GHOSTS-LITE, a lightweight network simulation tool using .NET, to simulate realistic network activity for cyber exercises, saving 1800GB of RAM during company exercises and reducing CPU utilization by over 60%
- Configured a locally-hosted LLM codebase to leverage GPU processing, reducing query response times by 90%+
- Implemented a SQLite authentication system and logging for the LLM, ensuring secure access for authorized users

### Service Chair

Dec. 2023 – Apr. 2024

*Alpha Kappa Psi Professional Business Fraternity*

*Boston, MA*

- Spearheaded major service events, coordinating logistics and volunteers to successfully engage over 150 participants leaving not only a significant contribution to the community but also enhanced the fraternity's recruitment efforts
- Collaborated with other chapter officers to integrate service initiatives into the clubs overall goals and objectives

### Software Engineer Intern

Dec. 2023 – Feb. 2024

*Afterflea*

*Boston, MA (Remote)*

- Engineered PersonaNet's Convo Generator, a device built with Python, Node.js, and OpenAI API that creates human-like conversation, fostering a distinct and inviting atmosphere while keeping users actively engaged
- Led project involving prompt engineering and the creation of 100+ page stories spanning unique genres and topics

### Robotics Intern

Jul. 2022 – Aug. 2022

*Oak Ridge National Laboratory*

*Oak Ridge, TN*

- Coordinated a group roboticsresearch project alongside expert researchers at Oak Ridge National Laboratory
- Programmed using BASIC and Arduino to optimize the path-finding capabilities of previously constructed robots
- Designed and presented a visually compelling and informative poster of findings to a distinguished panel of Appalachian region state representatives showing the benefits of our autonomous robot navigation

## PROJECTS

### Peace Of Mind | *React.js, Next.js, Typescript, Python, Flask, Firebase, Tailwind CSS*

- Developed a mental health AI chatbot tailored to college students in a group of four using OpenAI's public API
- Implemented server-side functionalities in backend using Python and Flask, enhancing the chatbot's capabilities
- Utilized Firebase to facilitate communication between the applications backend and React.js frontend

### NeuroJump | *Python, Pygame, NEAT-PYTHON*

- Created an endless runner game with core mechanics such as collision detection, obstacle generation, and motion
- Integrated the NeuroEvolution of Augmenting Topologies (NEAT) algorithm to empower the game with ML capabilities, enabling the system to autonomously adapt to the gameplay until the game was played perfectly

### jakelanglois.com | *React.js, Vite, JavaScript, Tailwind CSS, HTML*

- Deployed and maintained a personal website using Vite, a build tool that seamlessly blends React.js, JavaScript, Tailwind CSS, and HTML to create an engaging and polished platform that showcases my portfolio and interests
- Innovatively incorporated interactive elements, delivering a visually compelling experience that captivates visitors

## TECHNICAL SKILLS

**Languages:** Java, Python, C#, JavaScript, TypeScript, HTML5, CSS, BASIC

**Frameworks:** React, Node.js, Express.js, .NET, Flask, TailwindCSS

**Developer Tools:** Git/GitHub, Docker, Firebase, Postman, VSCode, Pygame, Eclipse, Figma