

# John (Jack) Berg

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## EDUCATION

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### Tufts University

Medford, MA

*Bachelor of Science in Computer Science, minor in Mathematics*

*Expected May 2025*

- **Cumulative GPA:** 3.91/4.00
- **Relevant Coursework:** Data Structures & Algorithms, Security, Machine Struc. & Assembly Language Programming, Linear Algebra, Software Engineering, Operating Systems, Computation Theory
- **Honors:** Howard Sample Prize Scholarship in Physics, Dean's List

### Technical Skills

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**Languages:** Java, C++, C, Python, HTML, CSS, JavaScript, VHDL, x86 assembly, SQL

**Frameworks/Tools:** Node, Express, React, MongoDB, MySQL, Git, Postman, Wireshark, Spring, Vaadin

**Additional Skills:** Google Suite, Microsoft Excel & PowerPoint, Intermediate Japanese

## PROFESSIONAL EXPERIENCE

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### Software Engineering Intern

Boston, MA

*P/E Investments*

*June 2024 – August 2024*

- Utilized Java, SpringBoot, Vaadin, and MySQL to develop a conference management and analysis web application for integration into company's CRM system
- Implemented features to search and maintain conference-related data, supported tracking of conference expenditures through vendors, provided analysis of company growth through conference attendance
- Presented project to 50 colleagues, sharing the current features and next steps of the web application

### Camp Director

Norwood, NJ

*Code Ninjas*

*June 2022 – August 2022*

- Taught 6 different course curriculums to 150 campers ranging from 6 - 14 years of age
- Utilized Python, Lua, and Scratch to manipulate video games (Roblox, Minecraft, etc.), creating an educational and fun programming experience that was adapted toward the age of the students
- Coordinated with 5 counselors to meet the goals of the camp and ensure proper facilitation of curriculum

## LEADERSHIP & ACTIVITIES

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### Tufts Club Lacrosse

Medford, MA

*Vice-President*

*September 2022 – Present*

- A founding member as a sophomore; develop teamwork and work ethic to meet personal and team goals; led team as goalkeeper to 18<sup>th</sup> in the NCLL Division 2 in first year of the club program
- Elected as Vice President in Junior year; budget \$5,000 for club's annual expenses; coordinate with fellow club leaders and Tufts' club sports administration to schedule games and practices

### Tufts University Software Engineering & Computational Theory

Medford, MA

*Course Assistant*

*May 2024 – Present*

- Assisted over 100 students of Tufts' computer science courses by grading assignments, hosting office hours, offering one-on-one help, and facilitating recitations

## PROJECTS

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### Image Compressor & Decompressor

- Implemented a lossy Portable Pixel Map compressor and decompressor using techniques such as color space conversion, quantization, and bit packing to achieve a minimal loss of image information
- Developed comparator to calculate % difference between two PPMs to test compressor & decompressor

### Concurrent MBTA Simulator

- A multi-threaded simulation of the Massachusetts Bay Transportation Authority in which passengers ride trains between stations, boarding and deboarding to complete their desired journeys
- Applied advance threading techniques, such as locks and synchronization, to manage shared resources