

# Brooke Chalmers

✉ [chalmers.b@northeastern.edu](mailto:chalmers.b@northeastern.edu)

☎ (207) 200-6829

🏠 Boston, MA & Portland, ME

🔗 <https://breq.dev/>

🔗 [/breqdev](https://github.com/breqdev)

📅 Available May–December 2023

## Education

**Khoury College of Computer Sciences**, Northeastern University, Boston, MA September 2021–Present  
Candidate for Bachelor of Science in Computer Science  
GPA: 3.89/4.00, Honors Program, Dean's List all semesters  
expected graduation May 2025

Relevant coursework: *Fundamentals of CS I & II (accelerated)*, *Object-Oriented Design*, *Algorithms*

**Scarborough High School**, Scarborough, ME

September 2019–May 2021

**Maine School of Science and Mathematics**, Limestone, ME

September 2017–May 2019

National Merit Scholar, Maine All-Star Math Team in 2018 and 2019 seasons

## Skills

**Languages:** Python, Rust, JavaScript, Node, TypeScript, CSS, Java, C++, MOS 6502 Assembly

**Tools:** Git, Linux, React, Tailwind, Redis, ROS, Docker, Bash and Zsh, VS Code, IntelliJ

## Work Experience

**Khoury College of Computer Sciences**, Teaching Assistant, Boston, MA Sept 2022–Dec 2022

- Provided one-on-one assistance to students in an accelerated fundamentals of computer science course.
- Conducted labs, planned assignments, and graded submissions for 70 students as part of a small team.
- Implemented and deployed infrastructure in Rust used for demonstrating student submissions.

**Texas Instruments Inc.**, Manufacturing Specialist Operator, South Portland, ME June 2021–August 2021

- Operated 20 semiconductor photolithography machines in a cleanroom environment.
- Scheduled and batched work, monitored equipment for malfunctions, and performed basic maintenance.
- Proposed an optimization to automated materials stocking which was enacted site-wide.

## Extracurricular Involvement

**Northeastern University Mars Rover Team**, Software Team Co-Lead Fall 2021–Current

- Led development of an entirely new base station control interface leveraging React and TypeScript.
- Communicated with electrical, firmware, and software teams to integrate various parameters into the UI.
- Conducted onboarding lectures and wrote reference materials covering React, ROS, Git, etc.

**Red Storm Robotics at Scarborough High School**, Team Captain

Fall 2019–Spring 2021

- Founded a new VEX Robotics team, recruited members, and organized meetings.
- Trained teammates on embedded programming with C++, use of Git, and software documentation.
- Contributed 300+ lines of code and tests to the popular OkapiLib robotics library.

## Personal Projects

**Modular Retro Emulation Framework for Desktop and Web** 🔗 🔄 Fall 2022

- Developed a project in Rust for emulating the Commodore 64, VIC-20, and other 6502-based machines.
- Implemented both GPU-accelerated desktop support and WebAssembly support for web deployment.

**LiDAR-based Expressive MIDI Controller** 🔗 🔄

Spring 2022

- Designed a musical instrument with a LiDAR sensor to track the position of the user's hands.
- Implemented a rule-based strategy in Python to process point cloud data and control Ableton Live.

**Addressable LED Choker and Companion Android App** 🔗 🔄

Fall 2021–Spring 2022

- Built several necklaces using addressable WS2812B LED strips and various ARM microprocessors.
- Devised a resilient serial protocol for selecting an animation and providing parameters.
- Developed an app with React Native to send animation commands over USB or Bluetooth.