

ELIAS LARSEN

Computer Engineering & Computer Science Graduate

@eliasbylarsen@outlook.com
Boston, MA

@larsen.el@northeastern.edu
larsen-elias

+1 (603) 247-2477

62 Cameron St, Brookline, MA 02445

QuaternionsRock

WORK EXPERIENCE

Software R&D Co-op

Delsys

July 2022 – December 2022 Natick, MA

- Rewrote and optimized the NeuroMap GPU pipeline according to CUDA best practices, drastically improving throughput and reducing latency
- Optimized the boundary between managed and unmanaged code in the NeuroMap .NET application with P/Invoke

Image Processing Intern

SpectraWAVE

July 2021 – April 2022 Bedford, MA

- Wrote the company's primary GPU-accelerated 3D image processing library in CUDA C++ (20x faster than OpenCV-based implementation)
- Developed the dataset annotation software used by a team of physicians to produce labeled training data for our AI models

PROJECTS

Novel Microprocessor Architecture

Personal; Research, Northeastern University

October 2023 – Ongoing Boston, MA

- Developing a massively parallel dataflow architecture based on a radically different model of computation under the advisement of Dr. Gunar Schirner
- Pursued both as a personal project and as a supervised research credit
- I hope to continue my research in a more formal capacity as the subject of my PhD thesis at Northeastern University

SmartSkates

Captstone Project, Northeastern University

May 2024 – April 2024 Boston, MA

- Created a comprehensive system to precisely track the position and orientation of figure skates on an ice rink
- Designed and built two pairs of waterproof skate-mounted devices, along with eight base stations to be placed around the rink
- We developed a complex sensor fusion algorithm using a combination of UWB ranging and 9-axis IMU data
- In the process, I developed the *only* correct driver for the BNO08x family of IMUs in the Arduino ecosystem, and published it on GitHub

CubeWorks

Personal

2019 – Ongoing

- A collection of highly mechanical SolidWorks parts designed to explore the limitations of modern 3D printing technologies
- Some highlights include a fully functional 7x7 Rubik's cube, printed in 225 pieces on a Formlabs Form 3, and a hinged rendition of the "Great Yoshimoto Cube" printed in one piece on the Formlabs Fuse 1

EDUCATION

M.S. in Computer Science

Northeastern University

May 2023 – Ongoing

- GPA: 4.0
- Extracurriculars: NUCCDC

B.S. in Computer Engineering and Computer Science

Northeastern University

September 2019 – April 2024

- GPA: 3.563
- Extracurriculars: Trap & Skeet

ACHIEVEMENTS



Graduated *Cum Laude*

with a bachelor's degree in my two favorite subjects



Made the Dean's List

every semester of my attendance at Northeastern University

STRENGTHS

Domain Expert

Complex Problem-Solver

Project Management

Hardware Acceleration

Embedded Devices

TECHNICAL SKILLS

Rust

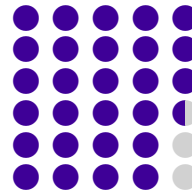
C++

CUDA

Python

SQL

C#



Arduino Internals ("Cores")

SolidWorks

SystemVerilog

Unity

