

Education

2023 - 2027 University of Massachusetts Amherst, B.S. Computer Science, B.S. Physics, **GPA: 3.63/4**

- Relevant Coursework:

Computer Science: Data Structures in **Java** and **Python, C/C++** Programming, Python Programming, Programming Methodology with **TypeScript**, Reasoning Under Uncertainty, Computer Systems Principles, Introduction to Computation

Physics and Math: Computational Physics, Electricity and Magnetism, Mechanics, Intro **Linear Algebra**, Math Methods of Physics, Thermodynamics, Physics Laboratory 1, Multivariate Calculus

2018 - 2023 Concord Carlisle Regional High School

- Relevant Coursework: AP Computer Science, **Java** Programming, **Python** Programming

Certifications - <https://www.credly.com/users/isaac-pelenur>

Basics of Quantum Information - IBM

- Quantum Computation, **Quantum Information**, Quantum Theory

IBM Quantum Challenge 2024 Achievement - IBM

- **Python, Qiskit 1.x**, Qiskit Patterns, Quantum Computing

Research

December 2024 - Now **Quantum Entanglement Purification Circuit Optimization** (QEPOptimize repository)

- Research Job under Professor Stefan Krastanov
- Reformatting, testing, and optimizing prior entanglement purification optimizer code
- Written in the **Julia** programming language
- Building GUI for easy optimizer use and generation of efficient entanglement error correction quantum circuits

Projects - <https://github.com/xoth42>

- FileTypeFuzzer - **Python** package for generating file mutations and testing files to search for vulnerabilities
- DriveBase - **Java** code for robotics team robot
- Reaper - **Python** script to kill zombie processes
- Cpnt - **C++** color printed messages from terminal
- MagCalc - **Python** calculator for variables in regard to a railgun-motor circuit

Skills

- Languages: Java, Python, C, C++, TypeScript, Julia
- Frameworks: Jest, Node, React, NumPy, Pandas, Matplotlib
- Hackathons: UMass Lowell GenCyber CTF 2022 (First place), Hack UMass 2023, minutemanCTF
- Linux Server Setup and Administration, Command Line: Git, Bash, Zsh, PowerShell, SSH
- Basic Quantum Computing, Qiskit
- Basic Cybersecurity and Penetration Testing. Proficient with Onshape CAD
- Conversational Spanish, Fluent English

Extracurricular Involvement

October 2022 - February 2023 **Robotics Team**

- Built and implemented **Java** software for our team's robot
- Trained other students how to use the robotics **API**
- Derived mathematical representations of robot's movement to program **automation**