

Luke LaBonte

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EDUCATION

UNIVERSITY OF MASSACHUSETTS AMHERST

Expected May 2024

Bachelor of Science in Mathematics

Concentration in Mathematical Computing

Cumulative GPA: 3.7/4.0; Dean's List

Relevant Coursework: Algorithms; Data Structures; Scientific Computing; Mathematical Modelling; Data Visualization

QUINSIGAMOND COMMUNITY COLLEGE

Sep 2020 - May 2022

Computer Science

Cumulative GPA: 3.8/4.0; Dean's List; Phi Theta Kappa Honors Society

Relevant Coursework: Computer Science; Software Engineering; Computer Architecture; Statistics

WORK EXPERIENCE

FREELANCE DEVELOPER

Auburn, MA

SELF EMPLOYED

Jun 2023 - Present

- Designed, built, and shipped a customer-facing website
- Utilized Facebook and Google APIs to ensure seamless content integration
- Optimized product to be ~150% more performant than previous existing solution

MATH TUTOR

Worcester, MA

QUINSIGAMOND COMMUNITY COLLEGE

Dec 2021 – Aug 2022

- Taught material from 15+ classes, from pre-algebra to statistics to calculus
- Explained concepts in new and intuitive ways to encompass all students and styles of learning
- Received excellent reviews and increased overall student success

SELECTED PROJECTS

CUSTOM PROGRAMMING LANGUAGE

Repository

- Implements modern features like namespacing, modules, precedence parsing, and bytecode compilation
- Conducted extensive research into the design and implementation of modern functional programming languages
- Features extremely powerful type system; System F_ω extended with algebraic data types and existentials

MACHINE LEARNING LIBRARY

Repository

- Created an extensible neural network library with gradient descent learning
- Built from scratch with no libraries; primary goal was to explore the mathematics of deep learning

ADDITIONAL

Programming Languages: Rust, C/C++, C#, Python, Java, JS/TS, Haskell

Libraries & Frameworks: OpenGL, WebGPU, Glum, Bevy, React, Blazor, Pandas, Numpy

Tools: Office Suite, Git, VSCode, JetBrains Suite, Vim, Linux, Photoshop, Premiere Pro, Wordpress

Soft Skills: Excellent written and verbal communication; strong problem-solving; strong collaboration; highly motivated; creative