

alessandra d. r. s.

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ad.rs · github.com/MixedMatched

Available: May 2025 - August 2025

Education

Northeastern University, Boston, MA

Sep 2022 - Present

Khoury College of Computer Sciences

Expected: May 2026

Bachelor of Science in Computer Science and Philosophy

Dean's List | Dean's Scholarship

GPA: 3.76/4.0

Related Coursework: Computer Systems, System Security, Theory of Computation, Advanced Logic, Computer Networks, Logic and Computation, Object-Oriented Design

Computer Knowledge

Operating Systems: Linux (Fedora, Debian, Arch), Windows

Programming Languages: Rust, C, Lean, C++, Java, Scala, Verilog, Python, Scheme/Racket

Experience

Desktop Software Engineer (Algorithms) · Formlabs Inc. · Boston, MA

Sep 2024 - Dec 2024

Research Assistant · Northeastern University · Boston, MA

Jan 2024 - Apr 2024

- Creating a system, written in **Python** for giving students automatic feedback on homework
- Organizing project into different roles and assigning those roles among myself and a team

Projects

Planner

Apr 2024

- Created a UML description of an object-oriented system for collaborative event planning
- Wrote an implementation of that description using Java and Swing

Formalizing Game Theory 

Dec 2023

- Devised a formalization of Game Theory Concepts in the **Lean 4** proof language
- Wrote example games and example proofs for documentation purposes

Eight-bit ALU

Nov 2023

- Wrote an implementation of an 8-bit Arithmetic Logic Unit in Scala using **Chisel**
- Included functionality for arithmetic add, sub, mult, and div as well logical and, or, xor, and not, as well as flags for overflow and zero
- Synthesized the design on an **Xilinx Artix-7 FPGA** and verified its functionality

Fourbee CPU 

Feb 2023

- Authored a simple, 4-bit instruction set architecture
- Built an implementation of the instruction set architecture using **Verilog**

Citrus 

Jun 2022 - Jan 2023

- Programmed an **Open-Source Rust** library for doing Computer Algebra
- Devised an adaptable model for rewriting mathematical expressions
- Implemented numerous mathematical expression parsing algorithms

Omega 

Aug 2019 - Dec 2020

- Remodeled major aspects of computer algebra processing in **Open-Source, C++ embedded** graphing calculator **firmware**
- Assisted with management and project direction in a team of up to 10 people

Interests

Reading Brandon Sanderson and David Graeber · Playing Bass, Piano, and Guitar · Replaying Pokémon in Spanish