Robert Morelli

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Education

B.S. Computer Science (in progress) ▪ University of Utah		*2022 – 2027 expected*
A.S. Computer Science (incomplete) ▪ SLCC		*2019 – 2022 transferred*

Technology

Expert
Zig, Dart, JS, WASM (WAT), CSS, SVG, GitHub Actions, MIPS asm

Proficient
Angular, C, C#, Cordova, Flutter, HTML, Java, Python, TS, Typst

Familiar
Bash, C++, CICD, CircleCi, Metal, MongoDB, OpenCL, PHP, Ruby, Rust, Swift

Experience

Research Assistant ▪ University of Utah — *Nov 2025 – present*
Benchmarking gradual typing in Meta's Cinder variant of python

Teaching Assistant ▪ University of Utah — *Sep 2025 – present*
Leading labs, grading, assisting students for COMP 1020

Software Engineer/Dev ops ▪ Stutor Inc. — *Sep 2023 – Apr 2024*
Architected CICD pipeline
Optimized DB indexes, reducing query times by up to 8x

Web Developer/Dev Ops ▪ Jerran Software Solutions — *Apr 2022 – Sep 2023*
Overhauled LDS MTC QA/CICD workflow, substantially reducing regression burden
Rewrote Embark app startup to reduce first time loading by up to 50%

Research Assistant Intern ▪ Earl Keefe PhD — *Nov 2020 – Jun 2021*
Visualizations for anthropology research

Web Dev. Intern ▪ Frelii — *May 2019 – Sep 2019*
Web scraping SNPedia for AI training

Projects

Optimized bead/gravity sort ▪ zig ↗ — *2026*
Bead sort done via popcount intrinsics and bit matrix transpositions. Only for 32 u5s

Tiny nkey rollover tester OS ▪ zig ↗ — *2025*
Ported as OS class assignment to zig and then added keyboard input and vga output

Fast approximate change of base ▪ python ↗ — *2025*
Novel algorithm for printing numbers larger than 10^{10^5} efficiently

Automated resume ▪ typst ↗ — *2025*
Automated typst resume deployed to website

Held-karp ▪ zig ↗ — *2025*
Well optimized bitset based Held-karp TSP algorithm

Spreadsheet formulas to DLL compiler ▪ c ↗ — *2025*
A spreadsheet which compiles formulas to a DLL which can be used in DOTNET projects

Color alchemy ▪ qt c++ ↗ — *2024*
A game for learning color mixing

CSS grid examples ▪ css html ↗ — *2024*
Examples of common design patterns implemented with css grid as a good reference

Randomized Pacman game ▪ java ↗ — *2021*
Pacman game using some algorithms from my 2420 class: A*, DFS, BFS, Union find

Misc

Added code field to instruction decoder ▪ MARS IDE ↗ — *2025*

#12 Ranked team at Rocky Mountain Regional Contest ▪ ICPC ↗ — *2025*

Jane Street Leaderboard
   Number Cross 5 ↗ — *May 2025*
   Sum One, Somewhere ↗ — *Apr 2025*