

Jonas Regehr

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EDUCATION

University of Utah

Bachelor of Science, Computer Science; Minor in Mathematics

August 2023 – May 2027

Salt Lake City, UT

- Cumulative GPA: 3.99/4.0 | Dean's List, Flagship Scholarship, UROP scholar
- Relevant Coursework: Algorithms & Data Structures, Programming Languages, Computer Organization, Computer Systems, Scientific Computing, Computer Security

EXPERIENCE

Undergraduate Research Assistant

University of Utah, Compilers and Programming Languages Lab

January 2024 – Present

Salt Lake City, UT

- Advisor: Prof. Panchekha; **co-author** on [Target-Aware Implementation of Real Expressions](#) ↗ at **ASPLOS 2025**
- Contributing to **Herbie**, a numerical compiler that automatically improves error of floating point expressions
- Engineered and implemented compiler backends for AVX intrinsics, NumPy, and the VDT math library
- Achieved **2.0x** speedup in output expressions targeting NumPy; **1.5x** VDT; support for RCP/RSQRT AVX instructions
- Worked with FFI, C, Racket; low-level performance measurement; vector operations and control flow
- Currently developing an automated pipeline to synthesize and evaluate novel floating-point accelerators

Software Engineer Intern

Lucid Software, Backend Performance Team

May 2025 – August 2025

South Jordan, UT

- Led caching and query optimizations, reducing backend latency for the logged-in landing page by **79%** (2.2s to 450ms)
- Reduced backend authentication latency by **87%** (150ms to 20ms) by eliminating redundant database calls
- Authored, tested, and merged **10+ performance improvements** using Scala and Bazel within a Jenkins CI/CD pipeline
- Used Datadog APM for distributed tracing and profiling to resolve bottlenecks on AWS EC2 and Fargate services
- Analyzed telemetry data with Splunk to inform optimization strategies and validate performance gains
- **Presented a deep-dive on backend performance to 300+ engineers**, sharing insights from the team's successes

EXTRACURRICULAR ACTIVITIES

Technical Coding Club

August 2023 – Present

- **Co-President (Fall 2025)**; organized weekly meetings for 30+ members by curating problem sets, leading discussions
- Co-organized Crimson Hacks, a hackathon with Redo for 100+ University of Utah students
- Represented the University of Utah at the ICPC Rocky Mountain Regional competition for three consecutive years

PROJECTS

Multiplayer Agar.io Clone

- Engineered a custom protocol on top of TCP/IP in C# for low-latency, real-time client-server communication
- Leveraged the .NET runtime and MAUI framework for cross-platform compilation for Windows, macOS, and iOS

Surface-Stable Fractal Dithering

- Implemented custom GLSL vertex and fragment shaders to construct a novel, surface-stable fractal dithering algorithm
- Built a complete rendering pipeline from the ground up in C and OpenGL with custom GLSL shaders

SKILLS

Programming Languages

Scala, Racket, Python, C, C++, C#, Java, x86 Assembly, GLSL

Cloud & DevOps

AWS (EC2, Fargate), Docker, Jenkins, Datadog APM, Splunk, Bazel

Frameworks & Libraries

REST APIs, .NET MAUI, Qt, Java Swing, NumPy, OpenGL

Developer Tools

Git, GitHub, VSCode, Visual Studio, IntelliJ, UNIX/WSL 2