Jonas Regehr

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Education

University of Utah August 2023 – May 2027
Bachelor of Science, Computer Science; Minor in Mathematics *Salt Lake City, UT*

- Cumulative GPA: 3.986/4.0 | Dean's List, Flagship Scholarship, UROP scholar
- Relevant Coursework: Algorithms & Data Structures, Programming Languages, Computer Organization, Computer Systems, Scientific Computing

Experience

Software Engineer Intern May 2025 – August 2025
Lucid Software, Backend Performance Team *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%** (from 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

Undergraduate Research Assistant January 2024 – Present
University of Utah, Compilers and Programming Languages Lab *Salt Lake City, UT*

- Advisor: Prof. Panchekha; **coauthor** 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; added 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

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, Android, 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

Extracurricular Activities

Technical Coding Club August 2023 – Present

- **Co-President (Fall 2025)**; organized weekly meetings for 30+ members by curating problem sets and leading discussions
- Represented the University of Utah at the **ICPC Rocky Mountain Regional competition** for two consecutive years

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