Reece Holmdahl

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Education

University of Minnesota — Minneapolis, MN
Bachelor of Science in Computer Science, Minor in Mathematics — *August 2021 – May 2024*

Experience

Other World Computing — Woodstock, IL
Software Engineer I — *July 2022 – August 2023*

- Designed and implemented a new Salesforce-ERP ETL system processing 10K daily records, reducing synchronization failures by 90% (from 300 to under 20 daily), and established real-time monitoring dashboards with Kibana.
- Resolved a critical Work Order Automation system failure within three hours, protecting $50,000 in daily revenue (5% of company revenue stream).
- Elevated code quality in .NET and React projects through strategic implementation of design patterns and packages, measurably improving performance and maintainability.
- Improved sprint delivery from 80% to 95% completion rate over four months.

Software Engineer Intern — *April 2022 – July 2022*

- Optimized six major database queries in the RMA processing app, increasing performance by 70% through analysis, indexing improvements, and parallel processing techniques.
- Improved application responsiveness in three apps through asynchronous programming and intuitive UI elements, resulting in improved efficiency supported by user feedback.
- Transitioned older software deployments to CI/CD using Jenkins and Octopus, streamlining DevOps processes, enabling automatic testing, and reducing manual errors.

Projects and Volunteering

Open WebUI Desktop | *Tauri, Svelte, TypeScript, Rust* — December 2024 – January 2025

- Fulfilled a popular community request by developing a desktop app for Open WebUI.
- Implemented requested features like the floating chatbar, global hotkey, and companion chat window.
- Created a novel solution for managing application state in Svelte across windows.
- Contributed the project back to Open WebUI, with development continuing under their organization.

WebTracer | *Rust, React, WebAssembly, wgpu* — October 2024 – Present

- Implemented a realistic light transport simulation (raytracer) from scratch with minimal packages.
- Optimized render time by leveraging cache locality, SIMD instructions, and concurrency with Rayon.
- Provided fast and efficient execution with broad browser support by compiling to WebAssembly.
- Created a React UI for editing scenes, managing assets, and seeing a live preview of the render.
- Continuing to improve render time by leveraging GPU computation with wgpu and by implementing the ReSTIR technique.

holmdahl.io | *Hugo, React, Vite, GitHub Actions* — September 2024 – October 2024

- Designed a responsive portfolio website with static site generation to feature professional projects and articles.
- Integrated Google Tag Manager and Analytics to gain insights into website usage and optimize user experience.
- Leveraged GitHub Pages and Actions as a no-cost hosting and CI/CD solution with fast serving speeds.
- Created a Vite build pipeline to minify, use CDN-served JS packages, and bundle WebAssembly to optimize load time.
- Contributed a responsive image system to the Hugo project that improved PageSpeed Insights score from 68 to 85 and reduced LCP by 50% on slow 4G connections.

Robotics Mentorship | *Communication, Leadership, Project Management, Java* — January 2025 – Present

- Volunteering as a software mentor for the Eagan High School FIRST Robotics Competition (FRC) organization.
- Providing technical guidance to 8 students, developing their proficiency in Software Engineering principles, Java programming, simulation, and computer vision techniques.
- Working closely with professionals across many disciplines to help students learn novel skills and achieve complex goals.

Technical Skills

Languages:	C#, Go, TypeScript/JavaScript, Ruby, Python, Java, Rust, C/C++
Frameworks:	.NET, Gin, Node.js, Rails, FastAPI, React, Svelte, Next.js, Spark, PyTorch, NUnit
Developer Tools:	AWS, Terraform, Git, GitHub, Datadog, Elasticsearch, Jenkins, Octopus, Docker, Kubernetes, Jira
Databases:	PostgreSQL, MongoDB, DynamoDB, Redis, Snowflake, Microsoft SQL Server