



# Andrew Borders

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I'm a hands-on developer with a passion for computer graphics, music, and web development. I like learning, challenging myself, and collaborating with others. I'm currently seeking a software development position at a company that values mentorship and growth.

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## Education

### University of Michigan

College of Engineering, MSE of Computer Science

Ann Arbor, MI

Aug 2024 - Nov 2025

College of Engineering, BSE of Computer Science

Aug 2020 - May 2024

- GPA: 3.80 | Dean's List
- Focus: Web Systems, Computer Graphics, Computer Architecture, Parallel Computing.

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## Work Experience

### Lagena

Co-Founder and Full-Stack Developer

May 2024 - Now

- Developed a cost-effective method for rendering digital avatars and optimized , reducing cloud costs by 90%.
- Built a dynamic backend API for real-time, interactive avatars, integrating user authentication, low-latency streaming, efficient video processing, and third-party language/speech APIs.

### Nonprofit Web Development

Austin, TX

Freelance Full-Stack Developer

Feb 2020 - Now

- Helped local nonprofits, including the Tapestry Foundation, establish and expand their online presence.
- Boosted community engagement and visibility through modern, SEO-friendly, professional websites.

### WayWiser

Austin, TX

Backend Software Developer

May 2023 - May 2024

- Contributed to developing full-stack web application that empowers the caretaking network of elderly or disabled people more effectively communicate.
- Engineered an SMS-compatible AI assistant featuring a custom context management system (pre-MCP) to deliver user-specific insights and memory, enhancing the relevance and personalization of user interactions.

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## Projects

### WebGPU Projects

#### Rasterizer

- A Blinn-Phong rasterizer written in TypeScript, bundled with Vite, and using GitHub Actions for CI/CD.
- Features a dynamic 3d scene with rotating cubes, demonstrating a next-gen rasterization pipeline for the web.

#### Shader Toy

- A WGSL pixel shader development environment written in TypeScript, bundled with Vite, and using GitHub Actions for CI/CD.
- Allows users to iterate on shaders with real-time syncax feedback and graphical updates. Ideal for learning, prototyping, and exploring GPU-based visual effects.

### Verilog RISC-V Multiprocessor

- Worked with a team to design and optimize a RISC32 multiprocessor, minimizing clock speed and cycles per instruction.
- Implemented R10k architecture, N-way superscalar execution, GSHARE branch prediction, OoO loads, and I-cache prefetching.

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## Skills

**Programming Languages:** C++ | Python | TypeScript | JavaScript | Java | HTML | CSS | GLSL | CUDA | SQL

**Technologies/Frameworks:** Docker | Kubernetes | Terraform | Amazon Web Services | Google Cloud | Auth0 | React | PostgreSQL | MongoDB | Redis | WebGPU | Vulkan