Joseph Wardle

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Work Experience

Pipeline TD — Student Capstone Film (github.com/joseph-wardle/bobo-pipeline) October 2025 — Present

- **Maintain and extend a film-scale, OS-agnostic USD** pipeline used by 40+ artists across **Linux** and Windows.
- Built an automatic proxy tool for point instanced USD assets (foliage) to **improve viewport performance by 70x**.
- Developed automated rendering tools using **Renderman and Pixar Tractor** on a 88-node render farm.
- Wrote a series of **MEL** scripts to correct and modify large sets of environment assets.
- Built a unified publishing tool that auto generates Houdini-ready USD assets and `.hipnc` files from any DCC.
- Developed **PyQT** tools to streamline artist workflows; integrated with **Flow Production Tracking System**.

Web Developer March 2025 — Present
Brigham Young University — Computer Science Department *Provo, UT*

- Engineer and maintain department web services as **Django** applications using SWIFT development practices
- Design REST endpoints and internal admin UIs for non-technical users.
- Build **CI/CD pipelines** for test, image build, and deploy; local dev with **Docker Compose**; deploy to **Kubernetes**.
- Operate in **Linux** environments; instrument health checks and structured logging to simplify ops troubleshooting.

Audio Engineer September 2023 — Present
Brigham Young University *Provo, UT*

- Live audio mixing for stadium sports, large-scale devotionals, and performances; FOH, streaming, sound-system design.
- Lead small crews and coordinate with clients—prioritize clear communication, reliability, and incident response.

Projects

Homelab & DevOps (Linux Server Management) (josephwardle.com) 2023 — Present

- Run **Fedora Server** services (**Podman/Quadlet**, **systemd**); reverse proxy + TLS via **Caddy/NGINX**.
- Configure backups/archival for services and media (Perforce, UE Zen, Website, Media Server, Password management)

Real-Time Ray Tracer (github.com/DallinClark/RealTimeRaytracer) March 2025 — August 2025

- Built a real-time ray tracer using **Vulkan 1.3** hardware-accelerated ray tracing; authored pipeline/bootstrap code.
- Worked in a 3 man team, added developer utilities and profiling hooks; implemented in **C++20 modules**.

Film Grain Synthesis (github.com/joseph-wardle/film_grain) August 2025

- Implemented physically motivated film-grain rendering (Newson et al., 2017) with GPU **compute shaders**.
- **Improved performance from the original paper by up to 90x** for grain-wise and **20x** for pixel-wise.
- Written in **Rust** with **WGPU compute shaders**; benchmarked on the Vulkan backend;

Education

Brigham Young University Provo, UT
Bachelor of Science, Computer Science (Animation & Games Emphasis) *Aug 2023 — Expected May 2027*

- Cumulative GPA: 3.95/3.96
- Relevant Coursework: Data Structures, Multithreading, Linear Algebra, Modeling, Rigging, Shading, FX

Skills

- **Languages:** Python, MEL, C++20/23, Rust, Bash, Java, C#, HTML/CSS
- **Systems:** Linux, Windows, systemd/Quadlet, Kubernetes, Podman/Docker, NGINX/Caddy
- **CI/CD & Deploy:** GitHub Actions, Jenkins, TeamCity, Git, Perforce
- **Render & Pipeline:** USD, Pixar Tractor, Houdini, Maya, Nuke, Perforce, Flow Production Tracking System (Shotgrid)
- **Other Software:** Unreal Engine, Unity, Adobe, Jira, Confluence