Christian Ermann

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Education

Tufts University — Medford, MA
Master of Science in Computer Science — Sep. 2022 – Aug. 2023

Lewis & Clark College — Portland, OR
Bachelor of Arts in Mathematics, Bachelor of Arts in Physics, Minor in Computer Science — Aug. 2018 – May 2022
magna cum laude

Experience

Research Programmer — Sep. 2023 – Aug. 2023
Boston Fusion Corp. — Lexington, MA

- Designed and implemented AI/ML software framework for analysis, fusion, and classification of data from diverse sensor sources with model explainability.
- Translated customer requests into actionable issues for myself and other team members to resolve.

Research Programmer Intern — Jun. 2023 – Aug. 2023
Boston Fusion Corp. — Lexington, MA

- Implemented Transformer-based pipeline to detect obscured peaks in audio data.
- Developed novel visualizations to explain detections, grounded in the source data.

John S. Rogers Science Research Intern, Summer 2022 — May 2022 – Aug. 2022
Lewis & Clark College — Portland, OR

- Prototyped a secure and dependable temperature sensor by designing and implementing device drivers for the seL4 microkernel in C.

John S. Rogers Science Research Intern, Summer 2021 — May 2021 – Aug. 2021
Lewis & Clark College — Portland, OR

- Developed convolutional neural networks to probe thermal phase transitions in quantum chromodynamics using the X-Y spin model with discrete symmetry preserving perturbations.

Projects

Real-time Terrain Generator | C, OpenGL

- Implemented the Marching Cubes algorithm to render terrain described by gradient fractal noise.

PolyFy | C++, OpenGL

- Evolve polygon-ized versions of images using a genetic algorithm, accelerated with Compute Shaders.

UEFI-based FORTH | x86-64 Assembly

- Implemented an indirect-threaded FORTH in x86-64 assembly designed to boot on bare-metal (UEFI).

Skills

- **Languages:** C/C++, Zig, x86 Assembly, Python, Rust
- **Operating Systems:** Linux, BSD, MacOS, Windows
- **Graphics APIs:** OpenGL, Vulkan, WebGPU, OpenCL, CUDA