

Employment

Software Developer I	Evident Scientific	Jul 2022 – Nov 2022
-----------------------------	---------------------------	----------------------------

- Maintained cross platform XRF applications including embedded device, desktop, and web applications using QT, C++, and Node.js with Angular and typescript.
- Redesigned web application UI to be more in line with existing native applications.
- Owned large scale Angular dependency upgrade (9.1 to 14.2.1).

Full Stack Web Developer	Jessamine County Schools	Oct 2018 – May 2019
---------------------------------	---------------------------------	----------------------------

- Designed UI/UX in Adobe Experience Design (Adobe XD) and communicated with clients to iterate on it and come to a shared design.
- Built a web application with over 10 thousand active users using Ruby on Rails.
- Assisted the maintenance of a large, multi-building network for the school system.
- Accelerated hardware and software troubleshooting for network issues.

Education

Lexington, KY	University of Kentucky	Aug 2019 – May 2022
----------------------	-------------------------------	----------------------------

- **Accreditation:** BS in Computer Science, Mathematics minor (cumulative GPA: 3.82).
- **Notable Courses:** Computer Graphics, Linear Algebra/3D math, Systems Programming, Algorithms and Data Structures, Statistics, Applied Artificial Intelligence, Applicable Algebra, Cryptography.
- **Honors:** Dean's List (2020-2022), Summa Cum Laude.
- **Skills:** (fluent) Rust, JavaScript, GLSL, HTML, CSS, Git. (proficient) C, C++, C/C++, Vulkan, OpenGL, OOP principles. (familiar) Python, Java, React, Vue, Angular, TypeScript.

Research

Lead Developer	University of Kentucky	Jan 2022 – May 2022
-----------------------	-------------------------------	----------------------------

- Led development on an entity component architecture.
- Owned creator tools for authoring codeless simulations in custom environments.
- Optimized performance for the architecture to perform well with several thousand object scenes using tools such as Valgrind, Very Sleepy, and Google Benchmark.
- Used Test Driven Development to ensure correctness.

Open Source

Path Tracer:	https://github.com/adenine-dev/luminiferous
---------------------	--

- Created a monte carlo multi-threaded CPU ray tracer in rust capable of rendering many complex scenes, with multiple BSDFs, complex geometry, and participating media.
- Optimized performance using acceleration structures, and hardware intrinsics..
- Implemented light importance sampling for faster convergence with fewer samples.

Rust Analyzer:	https://github.com/adenine-dev/rust-analyzer
-----------------------	--

- Contributed a memory layout visualization tool for viewing and understanding the internals of a program's memory size and alignment.
- Implemented a front end for the Visual Studio Code extension using its webview api.

Markdown Editor:	https://github.com/adenine-dev/pure-md-editor
-------------------------	--

- Created a fully fledged single page webapp markdown editor, using Codemirror and React.
- Supported local storage for persistent privacy focused note storage.
- Wrote custom styling solutions for real time inline markdown preview.