

Cade Brown — cade.site/about

me@cade.site · github.com/cadebrown

Software Developer ∪ Mathematician ∪ Digital Artist



PROFILE

- **Technical Communication**

I've given talks, written technical documentation, and published papers

Fluent in: \LaTeX , markdown, HTML

- **Animation and Video Editing**

I'm a digital artist, doing 3D CGI, video editing, and physical simulations

Using: Blender3D, KdenLive, ffmpeg, Python, OpenGL

- **Computer Poweruser**

I have spent years managing servers/websites, automating workflows, and deploying applications

SKILLS

- **Software**

C/C++, Python, JavaScript, WASM, CUDA, HIP, OpenMP, LLVM, NumPy, Tensorflow

- **Patterns & Practices**

Object Oriented Programming, Functional Programming, Continuous Integration (CI), Version Control (git), Scrum, Agile Development

EXPERIENCE

- **Innovative Computing Laboratory (ICL)**

Research Assistant - Knoxville, USA (2019-2021)

Worked as a research assistant, with a focus in dense linear algebra on High Performance Computing (HPC) systems, and code optimization on GPUs.

- **OLCF @ ORNL**

Research Intern - Oak Ridge, USA (2016-2017)

Primary software developer on the SimpleSummit visualization project, which entailed distributed realtime rendering on the embedded NVIDIA Jetson hardware, using both CPU and GPU resources.

PROJECTS

- **Full Timeline** [cade.site/timeline]

A more detailed timeline of my experience can be found at the above link, on my personal website.

- **MAGMA** [icl.cs.utk.edu/magma]

Software library for solving linear algebra problems using GPUs and CPUs. I ported and tuned the library for use on new AMD GPU hardware

Used: C/C++, CUDA, HIP

- **kscript** [kscript.org]

My dynamic programming language, which supports arbitrary precision, tensors, broadcasting, and more in the standard library

Used: C/C++, WASM, OpenMP

- **MPFR** [mpfr.org]

Open source library for arbitrary precision floating point math. I implemented various functions and test cases

MPFR is used in the GNU Compiler Collection (GCC)

AWARDS

- **ISEF (2018): Intel International Science and Engineering Fair Finalist**

Qualified after winning Grand Reserve Champion at SASEF (the local science/engineering fair) for my submission, *Software Techniques for Rendering Fractals*

- **SASEF (2018): Intel Excellence in Computer Science Award**

Awarded for my submission, *Software Techniques for Rendering Fractals*