

EDUCATION

University of Illinois

Computer Science; GPA: 3.52/4.00

Urbana-Champaign, IL

August 2017 - Present

- **Coursework:** Algorithms & Models of Computation, Algorithms (additional elective), System Programming, Applied Parallel Programming, Computer Security, Programming Languages & Compilers, Computer Architecture, Data Structures with Honors: Geometric Structures for Graphics, Probability and Statistics for Computer Science, Numerical Methods, Applied Linear Algebra, Virtual Reality

WORK EXPERIENCE

Advanced Reactors and Fuel Cycles (ARFC)

Undergraduate Research Assistant for Nuclear Engineering Department

Champaign, IL

May 2019 - August 2019

- Debugged a variety of issues in a Python nuclear engineering toolkit (PyNE) to ensure accurate functionality
- Re-implemented CircleCI integration tests to use the most recent data sources to ensure the library produces precise results, isolating test cases in different Docker containers with different optional dependencies
- Updated documentation to provide more accurate information on features, updates, and installation
- Overhauled Bash installation scripts and Dockerfiles for PyNE to reduce obsolete dependencies, update required dependencies to latest versions, reduce required permissions to install the library, and reorganize dependency package management

PROJECTS

Ray Tracer

January 2018 - May 2018

- Implemented a physically-based renderer using principles of light optics including reflectivity and transparency, improving render quality using multi-sampling
- Utilized a tree-like bounding volume hierarchy data structure to optimize organization of geometric primitives, especially for rendering larger triangle mesh models, improving ray-intersection detection to logarithmic time

Password Safe

November 2017 - January 2018

- Built a command-line interface password safe, ensuring confidentiality of data entries using SHA-256 hashing and Triple DES encryption, and utilizing a REPL to interact with the user
- Made use of Java archives to allow releases of the project to be portable and minimize required dependencies

ACM Pixel

October 2018 - December 2018

- Created a Flask app that receives x and y coordinates and a color as POST requests and places them on a screen
- Generated systemd services to allow automatic updating of software and launching of the application on boot

Arch Linux Configuration

October 2017 - August 2019

- Set up an Arch Linux installation by manually formatting partitions, setting up file systems, configuring drive mounting on boot, installing drivers, creating users, and other system administration tasks

ACTIVITIES

Chair of GNU Linux User Group (ACM)

August 2018 - December 2018

- Special interest group focused on promoting the use of Linux and the development of free and open source software
- Involved in projects to provide tools for computer science and engineering students and other ACM members to use, including a distributed GPU cluster utilizing idle time of machines containing Nvidia Titan Blacks

CS 125 Course Assistant

January 2018 - May 2018

- Assisted students taking Intro to Computer Science by providing more accessible guidance and instruction through one-on-one assistance in lab sections
- Held 2-3 weekly office hours with 5-10 students present to discuss issues students faced with the machine problems

PROGRAMMING SKILLS

Languages: Java, C, C++, Python, Bash, Verilog,
MIPS, Markdown, LaTeX

Tools/Technologies: Git, ViM, Raspberry Pi