

ALEX EIDT

✉ alex.eidt@outlook.com  [linkedin.com/in/alexeidt/](https://www.linkedin.com/in/alexeidt/)  github.com/AlexEidt  alexeidt.github.io

Experience

Paul G. Allen School of Computer Science and Engineering

January 2021 – August 2021

Teaching Assistant

Remote

- Teaching Assistant for CSE 163, an Intermediate Data Programming course focused on learning Data and Image Analysis in Python using analytic and machine learning techniques.
- Libraries taught were pandas, numpy, scikit-learn, matplotlib and seaborn.
- Co-lead weekly quiz sections of 20 students with fellow TA to review course concepts and go through example exercises.
- Held weekly office hours to answer student questions and graded weekly homeworks and final projects.

Open Source Contributions and Projects

FFmpeg Wrapper | *Go, FFmpeg*

December 2021

- Creator and Maintainer of an open source package in Go to provide simple, cross-platform frame by frame video reading/writing and webcam streaming using the multimedia tool FFmpeg. 5000+ downloads and 300 stars on Github.
- Created a similar tool to provide simple audio I/O including reading, writing and playing of audio files using FFmpeg.
- Implemented using FFmpeg subprocesses that communicate with Go via Stdin and Stdout pipes.
- Video I/O Tool: github.com/AlexEidt/Vidio. Audio I/O Tool: github.com/AlexEidt/aio.

ARM CPU | *Verilog*

October 2021 – December 2021

- Built a 64-bit 5 stage pipelined ARM CPU with built in data forwarding and accelerated branches.
- Implemented a basic assembly language featuring ALU Operations, Loads, Stores, Branches and Comparisons.
- Created test benches for all sub-modules and simulated them with a hardware simulator to ensure correct behavior.

Seam Carver | *Java*

August 2021 – October 2021

- Created a content aware image resizer (Seam Carver) with a Graphical User Interface (GUI) that can resize images vertically and horizontally in real time. github.com/AlexEidt/Karve.
- Features object removal and preservation via mouse highlighting.
- The GUI allows users to drag and drop images into the application, toggle seam highlighting, and prevent the GUI from updating to boost performance.
- Removed Seams can be added/removed from the image incrementally.
- Uses all CPU Cores in parallel for faster carving.

ASCII Video Renderer | *Python, Numpy*

June 2021 – September 2021

- Created a script to quickly convert any video file into ASCII form using NumPy vectorization. github.com/AlexEidt/ASCII-Video.
- Developed a novel ASCII rendering algorithm that achieves conversion speeds of 30 FPS on Full HD video (1920x1080).
- Runs 4000x as fast as conventional ASCII image converters.
- Created a YouTube video explaining the algorithm. youtu.be/SzqKClkCi_0.

Extracurriculars

UW Solar in the Urban Infrastructure Lab

October 2018 – September 2020

Web Master

Seattle, WA

- Created and designed new UW Solar (uwsolar.be.uw.edu) website using Vue.js and Node.js with a fellow computer science undergraduate. Designed the Urban Infrastructure Lab website (uil.be.uw.edu) using WordPress.
- Held weekly meetings with club officers, faculty, and UW Web developers to guide website design and host easily maintainable sites.
- Created documentation for future UW Solar students to easily understand, update and maintain the UW Solar website.
- Project Lead for a project to get a solar array installed on the Manastash Ridge Observatory. Oversaw cost estimation, schematic, and solar array design with UW Solar team to create a proposal and energy audit for a ground mounted solar array at the Observatory.

Education

University of Washington (UW)

September 2018 – December 2021

Bachelor of Science in Electrical and Computer Engineering GPA: 3.62

Seattle, WA

Technical Skills

Languages: Python, Java, C/C++, JavaScript, Kotlin, Go, Verilog

Developer Tools: VS Code, IntelliJ, Git, Linux, Bash