

# ALEX EIDT

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## Experience

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### 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.

### 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](http://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](http://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.

## Projects

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Karve | *Java*

August 2021 – October 2021

- Created a content aware image resizer (Seam Carver) that can resize images vertically and horizontally in real time using an optimized pathfinding algorithm. [github.com/AlexEidt/Karve](https://github.com/AlexEidt/Karve).
- Developed a UI with Java Swing that shows the image being carved with other features such as highlighting seams.

ASCII Video Renderer | *Python, numpy, imageio*

June 2021 – September 2021

- Created a script to quickly convert any video file into ASCII form. [github.com/AlexEidt/ASCII-Video](https://github.com/AlexEidt/ASCII-Video).
- Developed a novel algorithm that is heavily optimized using parallelization and numpy, resulting in conversion speeds of 10 FPS on Full HD video (1920x1080) and 30 FPS on HD video (1280x720).
- Runs 400x as fast as the conventional ASCII image converters.
- Achieved real-time color ASCII rendering on a webcam feed. [github.com/AlexEidt/ASCII-Vision](https://github.com/AlexEidt/ASCII-Vision).
- Created a YouTube video explaining the algorithm. [youtu.be/SzqKClkCi\\_0](https://youtu.be/SzqKClkCi_0).

Game of Life Simulator | *Kotlin, Java*

December 2020 – January 2021

- Created a simulator for Conway's Game of Life. [github.com/AlexEidt/Game-of-Life-Simulator](https://github.com/AlexEidt/Game-of-Life-Simulator).
- Developed a UI with for simulation as well as PNG capturing and GIF recording of the simulation.

UW Course Planner | *Python, JavaScript, HTML, CSS, Leaflet, Flask*

July 2019 – September 2019

- Created a web app with geospatial schedule visualization on a campus map, recursive course prerequisite trees, and course keyword search for courses at the University of Washington. Available at [alexeidt.pythonanywhere.com](http://alexeidt.pythonanywhere.com).
- Used Flask for the backend with Ajax and jQuery for the frontend. Built the map visualization with Leaflet.
- Built open source uwtools package in Python for parsing UW course catalog and time schedule websites.
- Presented project to UW IT Academic Experience Design & Delivery Team resulting in a course keyword search feature being added to UW's Course Management Tool.

Basketball Statistics Tracker | *Java, Swing*

January 2019 – August 2019

- Created a Java app to keep track of Basketball player statistics in real time.
- Used the Java Swing UI Framework to build an intuitive user interface for creating teams and adding statistics.

## Education

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University of Washington (UW)

September 2018 – December 2021

*Bachelor of Science in Electrical Engineering, GPA: 3.61*

*Seattle, WA*

## Technical Skills

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

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

**Skills:** Algorithm Design, Computer Vision, Image Processing, Data Analysis, Resilience, Teamwork