ALEX EIDT

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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.

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.

Projects

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.
- 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.
- 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.
- Created a YouTube video explaining the algorithm. youtu.be/SzqKClkCi_0.

Game of Life Simulator | *Kotlin*   December 2020 – January 2021, October 2021
- Created a simulator for Conway's Game of Life. github.com/AlexEidt/Game-of-Life-Simulator.
- Developed a UI for a scrollable and zoomable simulation playground.
- Built in image and video capturing of the simulation.
- Features an optimized simulation algorithm which only simulates areas with live cells.
- See a demo of the simulator on YouTube. youtu.be/1VX_Dk_YShU.

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.
- 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.

Education

University of Washington (UW)   September 2018 – December 2021
Bachelor of Science in Electrical Engineering GPA: 3.61   *Seattle, WA*

Technical Skills

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, Problem Solving