Katelynn Carlson

katelynnpcarlson@gmail.com
linkedin.com/in/katelynn-carlson/ | katelynnpc.github.io

EDUCATION

- Bachelor of Science in Computer Science Western Washington University (expected) June 2026
  - Minor in Mathematics June 2026
- Washington State Opportunity Scholar (WSOS)

EXPERIENCE

Research Assistant, Hutchinson Machine Learning Research Group **September 2024 - Present**

- Develop helpful tools for tracking animals in collaboration with the Woodland Park Zoo in Seattle, WA.
- Build software for zoo employees to use when studying their animal welfare through live camera footage.
- Work closely with a team of machine learning researchers to expand personal knowledge of the field by attending weekly meetings to discuss the state of the field, all while tackling application-driven projects.

PROJECTS

***Deadwood* Virtual Board Game – April 2025** **Java, Java Swing**

- Outlined the creation of the virtual board game Deadwood using UML diagrams to help visualize and outline software creation.
- Designed and built an object oriented backend framework to govern the board game's behavior
- Crafted and implemented a visually appealing GUI of the board game to be playable on a computer.

Spectrogram Convolutional Neural Network – March 2025 **Python**

- Brainstormed a deep learning model to solve a speaker identification problem
- Implemented spectrogram libraries to take .wav files and create spectrograms to perform analysis on.
- Created a CNN architecture to attend over two spectrograms to identify if they came from the same speaker
- Wrote a report documenting my architecture and described the success of my speaker identification model

Edge Detector – November 2024 **C**

- Implemented an image edge detector in C that would read a PPM file and perform a Laplacian filter on the image to highlight visual edges in the image.
- Evolved the program with safe multi-threading to help increase the speed of the computation process and keep all files safe from race conditions.

X16, 16 bit computer – February 2024 **C, Assembly**

- Developed a simulation of a reduced instruction set computer (RISC) called Ultron, complete with memory, registers, and a custom programming language.
- Created memory management functionality, including initialization, value retrieval, and memory dumps.
- Incorporated a command-line interface to accept user programs or file-based input, enhancing flexibility.

Travel Destination Website – June 2023 **HTML, CSS**

- Iteratively built a website to showcase a vacation location through the use of text and visuals.
- Maintained a consistent style and interesting appearance with the use of CSS
- Conveyed concise and easy to understand information delivery with the use of HTML

SKILLS

Programing Languages:	Python, Java, C, X86 Assembly, HTML, CSS, MySQL, MATLAB, Racket
Tools:	Vim, Git, SSH, PyTorch, NumPy, Weights & Biases, JDBC

ACHIEVMENTS

Won 3rd place in D2 Divion as a team at the 2024 PNW Regional International Collegiate Programming Contest.