

# Nick Withers

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## **EDUCATION**

**University of California, Davis - BS Computer Science**

September 2019 - December 2022

GPA: 3.956 - Graduated with Honors

## **SKILLS**

- C, C++, Java, JavaScript, Python, HTML/CSS, WebGL, GLSL, Haskell, Prolog, Erlang, MATLAB
- Critical Thinking and Problem Solving
- Basic computer architecture
- Effective Written/Verbal Communication

## **PROJECTS / COURSEWORK**

### **Computer Graphics - Fall 2023**

- Built a simple 3D renderer using WebGL which can load any scenes consisting of one or more obj files.
- Implemented shading using the Phong illumination model which supports multiple light sources and types.
- Also implemented texture mapping using normal maps.

### **Artificial Intelligence - Winter 2022**

- Implemented A\* path search algorithm to navigate down Mt. Saint Helens
- Wrote a program which implemented minimax algorithm to play connect 4 against a computer player as well as other students
- Built and trained a model which used deep Q-learning to play pong

### **Web Programming - Spring 2022**

- Built web-based game based on preferences over user inputted TikTok videos using a SQLite database
- Browser-side programming using Javascript, HTML, CSS, Flexbox and server-side programming using Node.js and Express
- Developed a React app with a React server and Node/Express server which performed an API call based on a calendar picker to get reservoir data from the CDEC which was displayed on a dynamic display

### **Computer Vision - Spring 2022**

- Implemented functions for filtering and edge detection using MATLAB
- Implemented a robust homography estimation in MATLAB using Harris corner detection, SIFT descriptors, and RANSAC to stitch a pair of images
- Trained and augmented a deep network using PyTorch to classify the images in the CIFAR10 dataset

### **Cryptocurrency Discord Bot / Personal Project - Winter 2023**

- Built a discord bot in python which retrieves cryptocurrency price information from livecoinwatch api and returns certain information according to user specified commands.
- Bot also updates its status to the current price of a token and refreshes every 30 seconds.

## **INTERESTS**

- Gaming, Blockchain, Generative Art, Golf, Snowboarding, Travel