

Reagan Orth

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Education

Bachelor of Science, Computer Science (August 2019-May 2023)

Virginia Tech, Blacksburg, VA

GPA: 3.3

High School Diploma (August 2015-May 2019)

Leland High School, San Jose, CA

GPA: 3.9, 1520 SAT/35 ACT

Professional Experience

Intelligent Systems Division Intern (Summer 2022)

Virginia Tech National Security Institute, Arlington, VA

Researched Graph Neural Networks and Reinforcement Learning with a small group to develop a novel network architecture that matched the performance of state-of-the-art networks within a Starcraft II testing environment.

Lifeguard, Swim Instructor, Gate Attendant (2016-2020)

Shadow Brook Swim Club, San Jose, CA

Lifeguard - Responsible for patron safety, substituted as pool manager when needed.

Swim Instructor - Taught children of all ages and ability levels how to swim more efficiently and effectively.

Gate Attendant - Checked patrons into the pool, led introduction of the new membership system software.

Volunteer Peer Tutor (2012-2019)

Simonds Elementary School, Leland High School, San Jose, CA

Tutored struggling students in Math and Spanish.

Projects

Moon Counter for Super Mario Odyssey: Python/PyTorch pretrained live audio recognition neural network to classify different in-game collectibles as they are obtained to a high degree of accuracy. When a "Moon" is detected, Optical Character Recognition is performed on the video feed to determine which specific Moon was just collected.

Twitch Plays Nintendo Switch: Python and C scripts to pull chat messages from a Twitch stream's chat feed, parse them for valid Switch inputs(i.e. "A" in Twitch chat represents the A button), and send them through an Arduino Uno to a Nintendo Switch. Used in an event with over 5,000 concurrent viewers.

Magic: The Gathering Draft Simulator: Python program that simulates a part of the trading card game Magic: The Gathering, involving seven AI computer opponents. GUI done with tkinter.

Custom Shell: C program that runs both custom and native commands, as well as executables. Includes input and output redirection, foreground/background processes, and signal handling.

MIPS32 Assembler: C program to parse and convert MIPS32 assembly code into machine code.

Skills and Interests

Computer Science: Seven years of programming experience in Python and Java, including work with APIs, Git, IRC, Image/Audio Recognition, Machine Learning, Neural Networks(PyTorch), Graph Neural Networks(PyG), AWS Cloud Computing, Dimension Reduction, SQL, Docker, multithreading. Some work in C, JavaScript, MatLab, HTML, R, Haskell, Prolog, Racket, Scala, and Stata. Proficient with Microsoft Office, the Google Suite and the Linux terminal.

Coursework: Data Analytics and Visualization, Machine Learning, Data Algorithms and Analysis, Numerical Analysis, Computer Organization, Computer Systems, Data Structures and Algorithms, Problem Solving, Software Design, Applied Combinatorics, Multivariable Calculus, Linear Algebra, Statistics, Econometrics, Statistics and Inference in Economics.

Hobbies: Distance walking(10-50 miles), running half marathons, reading mystery/thriller novels, listening to science/finance podcasts and old music, writing film reviews for 1940s movies, learning languages(currently Dutch).