Junqi Ye
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Education

09.2018 – 06.2022 **University of Washington**
B.S. in Electrical Engineering
GPA: 3.83/4 ***Major GPA***: 3.88/4
Annual Dean's List 2018-2020
Relevant Coursework: Introduction to Artificial Intelligence, Introduction to Embedded Systems, Data Structures and Algorithms, Computer Architecture I

08.2014 – 05.2018 **American Heritage School Boca/Delray**
Unweighted GPA: 4.72/5
Cumulative GPA: 5.2/5

Experience

01.2021 – present **Computer Vision Researcher**
University of Washington Formula Motorsports, Seattle, WA
- Contributing both segmentation and bounding box image for driverless-car project.
- Investigating and implementing cone-detection pipeline using traditional computer vision and learning-based approach.
- Validating machine learning models.

02.2020– 08.2020 **Assistant Researcher**
University of Washington Sensors, Energy and Automation Laboratory (UWSEAL), Seattle, WA
- Participated in signal processing team and researched image signals radiated from the SoC board.
- Investigated the difference in JPG and PNG image format and relevant output signals.

01.2019 – 04.2019 **Team Programmer**
University of Washington Underwater Robotics Team (UWROV), Seattle, WA
- Implemented shape detection feature using Python OpenCV pipeline and onboard webcam.
- Achieved shape detection and classification by ingesting images from webcam, images processing, and classifying the contour of the shapes.

Projects

02.2021 **Backgammon agent**
- Utilized expectminimax algorithm to create a stochastic backgammon AI agent.
- Developed a heuristic that allowed the agent to play with strategies.
- Included pruning for faster runtime.

08.2020 **Maze Solver and Carver**
- Utilized and implemented Dijkstra's algorithm for finding the shortest path through a maze.
- Utilized and implemented Kruskal's algorithm for creating a minimum spanning tree which forms a valid maze that always has a path from starting to finish point.
- Implemented Disjoint Set ADT for faster runtime in the Maze Carver algorithm

06.2020 **Flappy Bird**
- Utilized DE1_SoC board to output VGA signal to a display for the Flappy Bird gameplay.
- Players can choose to use either the onboard buttons or their voice to control the bird.
- The voice control unit had a microphone as an analog input, converted into digital signal using audio codec module. After going through the noise filter module, the signal was fed into a logic circuit that determined whether the voice level would trigger an event.

03.2020 **Dance Dance Revolution**
- Utilized a 16x16 dual color LED screen with the DE1_SoC board to program Dance Dance Revolution game.
- Using Linear Feedback Shift Register to generate semi-random pattern to toggle light for one of four banks.
- Designed and Implemented using Finite State Machine and combinational logic with SystemVerilog

Extra skills

Skilled in Java, Python, C/C++, SQL, SystemVerilog, OpenCV, TensorFlow
Technical Communication, Quick Learner, Active Listening, Microsoft Office suite