Andy Kong

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Education

Carnegie Mellon University - Pittsburgh, PA August 2018 – May 2022
B.S. Computer Science, GPA: 3.8

Hoover High School - Hoover, AL August 2014 – May 2018
GPA: 4.45

Work Experience

Cylab Research Assistant January 2019 - now

- Built Android app enabling WiFi P2P connections to create remote smartphone ad-hoc networks.
- Integrated on-board smartphone sensors with particle filter and ground-truth landmarks to accurately track indoor position.
- Prototyped augmented reality helmet for firefighters and other first responders in adverse conditions.

Projects

Smart PIN Entry System - Python (PyTorch), Raspberry Pi, CNN March 2019

- Repurposed Raspberry Pi and camera for use as a smart lock to detect number of fingers as a form of keycode entry.
- Augmented a homemade dataset of hand poses by 20x, and added Gaussian noise to prevent overfitting.
- Trained an ensemble model of three CNNs with CUDA platform to reach 85% overall accuracy.

Tetris AI - Python, Decision Trees, Genetic Algorithms November 2018

- Created a Tetris emulator allowing competitive Tetris games against a friend or AI.
- Used a genetic algorithm to optimize AI's cost function, pushing it to maximize score per piece placed.
- Learning mode lets AI emulate player's performance, allowing competition with a fair opponent.

Activities and Achievements

1st Place Team at Bosch Curbside Management Competition
Developed new system for dynamic parking allocation in high-traffic areas March 2019

Hack112 - Most Interesting Award github.com/kongmunist/World-Art
Image-to-map program, winner at CMU's largest hackathon. November 2018

Editor-In-Chief of Food for Thought critiquefood.blogspot.com
Writer of analytic food diary and travel blog selected by Memory of Mankind August 2016-now

Hoover Robotics Team Organizer August 2015-May 2017
Founded the first robotics organization in school district, with 50+ total members

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Skills

Languages: Python (OpenCV, PyTorch), MATLAB, C, Java, SolidWorks, LabView, JavaScript/HTML

Concepts: Android app development, Agile Development, OOP/OOD, NLP, Supervised ML (Neural Networks, SVM), Unsupervised ML (k-means, dimension reduction)