Sahil Vohra Singh

SF Bay Software Engineer

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Technical Experience

eBay Market Analysis – Software Engineer 2020

- Performing data analysis to understand the past resell market for a user requested item and estimate its expected value in today's market
- Built an eBay search URL from a user query and then scraped data off of every returned listing and stored the data in a csv
- Read the csv into a Pandas dataframe to compute pricing logistics (min/max/mean/mode) for current or sold listings

Linux Access Control, Face Verification – Software Engineer 2019-2020

- Processed images taken from webcam through a face verification system to control access to files in Linux
- Implemented Google's FaceNet (Schroff et al.) in Keras to learn an encoding of an image to a 128-point vector and compute the similarity between a webcam snap and a reference image to verify the person

Neural Style Transfer – Software Engineer 2018 - 2019

- Produced image with the content of one in the style of the other (Gatys et. al.)
- VGG-19 convolutional neural network pre-trained on a large ImageNet dataset in TensorFlow to extract specific features of from the images

Mercedes-Benz R&D, NA – Embedded Software Engineer 2016 - 2017

Acoustic Array Emitter Location

- Six multidisciplinary engineers design and develop a real-time embedded system prototype for Mercedes-Benz to locate the loudest human speaker within noisy enclosed environments, communicate the location remotely, and save that speaker's audio
- Functional end-to-end system correctly located loudest human speaking in a 4-seat Mercedes S-class 75% of the time
- Led the early research and system design resulting in minimal future revision
- Independently studied digital signal processing to design (MATLAB), develop (embedded C), and debug (LabView) a digital anti-aliasing filter to isolate human voices (85 Hz to 4 kHz) among other noises
- Cooperated with DSP teammate to optimize the signal processing software algorithms pipeline for better real-time performance

Slug-O-lympics Autonomous Drone – Embedded Software Engineer 2016

- Developed a hierarchical state machine operating a drone to get ping-pong balls from loading towers and drop three in holes before another drone
- Implemented interrupt routines built upon a provided priority scheduling framework to detect state changes in each sensor and service based on the priority of the combinations of the sensor states

Relevant Coursework

Algorithms and Data Structures | Machine Learning | Deep Learning | Mechatronics Design | Feedback Control | Microprocessors and Embedded C | Circuit Theory | Signals and Systems | Sensors and Sensing Technologies

Development

Software
Embedded
Machine Learning

Languages

Python
C/C++
Embedded C

Tools

MATLAB + Simulink
LabView
SolidWorks
Vim
Microsoft Visual Studio 2017

Libraries

TensorFlow
Keras
OpenCV
Pandas

Lab Equipment

Soldering
Oscilloscope
Multimeter
Signal generator

Education

Honors BS, Robotics Engineering

UC, Santa Cruz | Dec. 2017
GPA: 3.6/4.0