Soroush Famili

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EDUCATION

MS, Electrical Engineering **08/2021 – Present**
Texas A&M, College Station
GPA: 3.67/4.00

BS, Electrical and Computer Engineering **Graduated May 2021**
The University of Texas at Austin
GPA: 3.6/4.00

Relevant Coursework: Pattern Recognition, Data Science Principles and Lab, Digital Signal Processing, Digital Image Processing, Real-Time Digital Signal Processing, Applied Probability, Software Design, Algorithms

PROJECT EXPERIENCE

Honors Senior Design Project: Understanding Product Images for Amazon **08/2020 – 05/2021**

- Developed neural-net based machine learning models to recognize product image differences on Amazon.
- Implemented and fine-tuned state-of-the-art neural-net architectures for image comparison.
- Available for demo at https://github.com/SeniorDesignF20/AmazonUnderstandingProductImages

Framerate Upsampling **08/2020 – 12/2020**

- Created a deep learning network capable of framerate Upsampling through prediction of "missing" frames given the preceding frames of the video.
- Utilized an adaptive separable convolution network for frame interpolation with spatial transformer module to provide invariance to spatial changes in the images.

Engineering Tutor **08/2020 – 05/2021**

- Online individual tutor in EE 313 Signals and Systems and M 340L Matrices.
- Helped struggling students understand fundamental topics for homework and exams.

M-Net Neural Architecture for Eye Fundus Analysis **07/2020 – 09/2020**

- Implemented the work of Fu et al. (https://arxiv.org/abs/1801.00926) to create a convolutional network which segments the optic disc and optic cup in images of eye fundi to calculate cup-size to disc-size ratio (CDR) for Glaucoma detection.
- Obtains CDR accuracy of ROC = .90 on Retinal Fundus Glaucoma Challenge (REFUGE) dataset.

Machine Learning Lyric Generator **11/2019 – 12/2019**

- Designed a song lyrics generator based on user input using Long-Short Term Memory (LSTM) Neural Networks and Bidirectional Encoder Representations from Transformers (BERT).
- Wrote Python code to pre-process the raw lyric training data and helped write the PyTorch code to train the generator.
- Co-authored blog post detailing the entire project (https://medium.com/@nithanth.ram/generating-song-lyrics-64d72f224635).

Android App "Path Run" **12/2018 - 01/2019**

- Developed and published an Android app in Java called Path Run that uses the Google Maps API to find a random path with length given by the user, designed for long-distance outdoor runners/bicyclers.
- Constructed the path-finding algorithms that takes the user's geographical location to find an appropriate route, starting and ending at the user's initial location.
- Implemented a save feature using SQLiteDatabase API, allowing the user to save previously searched paths for future use.
- Organized multiple buttons and text fields for a modern, aesthetically pleasing user-interface.

SKILLS

Programming: C, Python, Java, MATLAB, JavaScript, ARM Cortex M Assembly, Rust, Verilog.

Hardware: Oscilloscope, Signal Generator, TI Cortex M microcontrollers, Xilinx FPGA.