Wyndham Hudson

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EDUCATION

Georgia Institute of Technology - Atlanta, GA **Expected: December 2020**
Master of Science in Computer Science, Machine Learning Specialization

University of Florida - Gainesville, FL **May 2019**
Bachelor of Science in Electrical Engineering, Computer Science Minor (*GPA:* 3.56)

EXPERIENCE

Graduate Research Assistant **August 2019 - Present**
Georgia Tech Research Institute, Electro-Optical Systems Laboratory - Atlanta, GA

- Creating an FPGA implementation of digital predistortion using gradient descent concepts
- Used GNU Radio to transmit and decode phase-shifted data between software-defined radios
- Designed Nyquist filter to limit noise and improve reliability in software-defined radios

Product/Test Engineering Intern **May 2018 - August 2018**
Texas Instruments, Inc. - Dallas, TX

- Designed prototyping board for automated test equipment tower
- Developed Python scripts to automate operation and data collection
- Created custom PCBs to validate dual-compression connector

Research Assistant **April 2017 - April 2019**
University of Florida, Aerosol and Particulate Research Laboratory - Gainesville, FL

- Wrote Python program to identify dust and calculate size from microscope images
- Reverse-engineered algorithm to sense the number of particles in the air
- Developed and tested an electrodynamic shield system to remove dust from solar panels

PROJECTS

Machine Learning Sign Language Translator

- Developed image processing algorithm to crop hand in image and distinguish from background
- Trained kNN and RF classification models to predict sign language letter given image input

Pacman AI

- Created efficient artificial intelligence agents to maneuver Pacman around ghosts to win
- Investigated A* search, minimax, alpha-beta pruning and inference to create an efficient model

Multi-Effect Guitar Pedal Box

- Wrote high-speed C code to create a “tremolo” effect to alter audio in real-time
- Used circular buffer to store incoming audio samples to create a “delay” effect

Hardware Implementation of Dijkstra’s Algorithm

- Created hardware architecture to improve search performance using parallelization
- Analyzed speed-up of hardware implementation relative to software using custom benchmarks

Multi-Client Chat Program

- Wrote C++ code to set up TCP/IP server on a specified port
- Utilized Berkeley socket API to connect multiple clients using the server IP and port number

SKILLS

Languages:	C/C++, Python, Java, Matlab
Technologies:	TensorFlow, Firebase, React-Native, QT
Tools:	Android Studio, Git, QT Creator, Code Composer

COURSEWORK

Machine Learning:	Machine Learning, Big Data Systems and Analytics, Artificial Intelligence
Computer Science:	Mobile Apps & Services, Data Structures & Algorithms, Computer Communications, Operating Systems, Computer Architecture