Justin K. Htay

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Electrical Engineering/Math major seeking a position as a signal processing engineer in 2021.

Education

Georgia Institute of Technology August 2016 - December 2020

- *Bachelor of Science in Electrical Engineering* *Atlanta, GA*
  Bachelor of Science in Mathematics *GPA: 3.95*

Experience

- **Sandia National Laboratories** May 2019 - February 2020
  R&D Intern, Autonomy for Hypersonics *Albuquerque, NM*
  - Assisted in preprocessing of images generated by synthetic aperture radar (SAR) for use in automatic target recognition (ATR).
  - Applied optimal control principles to improve Sandia's capability for real-time trajectory generation for hypersonic vehicles and increased output of trajectory simulator by a factor of 100.
- **Georgia Tech Research Institute (GTRI)** January 2017 - August 2018
  High Performance Computing Co-op, Advanced Concepts Laboratory *Atlanta, GA*
  - Applied optimization techniques such as genetic algorithms to design electromagnetic structures using the FDTD method.
  - Maintained 10 large computing resources, extensively utilizing Bash scripting, knowledge of Linux, and problem-solving skills.

Projects

- **Transfer Learning with Mario Kart** March 2020 - May 2020
  - Designed experiments, collected data, and trained different convolutional neural networks in Keras/TensorFlow to play Mario Kart and measure effects of transfer learning with performance across multiple game tracks.
  - Observed 10 second decrease in time on one track and better ability to play a blind track due to transfer learning.
- **Efficient Normal Random Number Generation** June 2018 - May 2019
  - Implemented novel rejection-free method for generating normally-distributed random numbers in MATLAB and C.
  - Performed rigorous statistical testing and optimization to ensure speed and accuracy of algorithm.
- **3D Printed Fragmented Aperture Antenna** January 2017 - June 2017
  - Designed 3D-printable antenna using GTRI's fragmented aperture approach generalized to 3D space.
  - Implemented a graph theory-based connectivity algorithm in Python to ensure manufacturing feasibility.
  - Published results in paper entitled *A 3D Printed Fragmented Aperture Antenna*.

Skills

- **Programming**: MATLAB, Python, bash, C, C++, Java, JavaScript, VHDL
- **Software**: Linux (Ubuntu, RHEL), TensorFlow, gnuradio, scikit-learn, Keras, Git
- **Hardware**: Software-Defined Radios, Xbee RFID Module, network/spectrum analyzers, microcontrollers, Altera FPGA
- **Coursework**: Signal Processing, Linear Algebra, Information Theory, Radar Imaging, Machine Learning, Optimization

Leadership

- **Georgia Tech College of Computing** January 2017 - May 2019
  Teaching Assistant, CS1371 (Computing for Engineers) *Atlanta, GA*
  - Served as Course Manager and was responsible for communication with professors, management of the TA team, and implementing course policies.

Awards

- **Outstanding ECE Senior Co-op Award** April 2019
  - Selected as the best senior co-op student in the School of Electrical and Computer Engineering by a panel of faculty.