Andrew **Tu**

Computer Engineer

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Education

Northeastern University | *Boston, MA* — *May 2020*

Bachelor of Science in Computer Engineering — *GPA: 3.9/4.0*

- Coursework: Algorithms, Computer Systems, Object Oriented Design, Circuits and Signals, Embedded Design
- Involvement: MIT Ballroom Dance Team, NU MONET Research, NUCAR Research, IEEE, Toastmasters, Society for Asian Scientist and Engineers (SASE) Mentor, Disability Resource Center Notetaker

Skills

Programming C, C++, Python, Javascript|HTML|CSS, Java, Excel VBA

Technologies Linux, OpenMP, Git, GDB, MATLAB, Microsoft Office

Hardware XBee Radio Modules, Teledyne Benthos Acoustic Smart Modems, Ethereum Mining

Technical Experience

Northeastern University Ethereum Research Project — *Boston, MA*

Undergraduate Research Assistant — *Sep. 2017 - Present*

- Developing network crawler to study end to end latency of the Ethereum discovery protocol

MIT Lincoln Laboratory — *Lexington, MA*

Co-Op Technical Assistant — *Jan. 2017—Aug. 2017*

- Parallelized radar signal processing chain in C++ using OpenMP and MPI resulting in 1700% speedup. Work demonstrated hybridized MPI and OpenMP parallelizations met project requirements and reduced development costs.
- Automated benchmarking efforts through python and bash scripts to rapidly test and compare over 350 configurations.
- Leveraged analysis tools from the Intel Parallel Studio Suite and Allinea Forge for debugging and optimization

Northeastern Interactive Clustering Engine — *Boston, MA*

Undergraduate Research Assistant **(NSF REU)** — *Jun. 2016 - Aug. 2016*

- Contributed to open source C++ machine learning library using scalable frameworks like Git, Cmake, Google Test.

Northeastern University Marine Observatory Network — *Boston, MA*

Undergraduate Research Assistant **(NSF REU)** — *Oct. 2015 - Jan. 2017*

- Designed and implemented smart buoy and GUI control system using C++, QT framework, and XBee Radio modules to bridge above water radio network with subsea acoustic network.
- Implemented MAC protocols in MATLAB on Teledyne Benthos SM-975 Acoustic Smart Modems to advance understanding of modem interactions and compare efficacy of MAC protocols over acoustic channel.
- Co-authored two papers and gave two major presentations (see personal website for links)

Selected Side Projects

NuVision: Augmented-Reality Heads Up Display Simulation — *Cambridge, MA*

2017 MIT Connected Care Design Hackathon | Top 5 of Hackathon — *Apr. 2017*

- Implemented a heads up display by overlaying data modules on live camera feed using HTML frontend and Flask backend.
- Constructed heat map of crime in Boston using Boston Public Data and Google Maps APIs. Utilized geolocations to alert user when nearing high crime areas
- Implemented facial recognition for POI alerts using Kairos Facial recognition API

Northeastern University Resource Finder — *Boston, MA*

Hardware Hackathon: Club Snell Edition | 1st Place Overall — *Apr. 2017*

- Implemented system to enable people to find on campus resources. Demonstrated with campus printers and library seats
- Utilized Google Maps API to display campus printers and plot routes to nearest printers.
- Implemented small scale XBee based sensor network to demonstrate working seat availability sensors

Achievements

Feb. 2017 **NU Talk 2017**, Presented to 300+ people on NU MONET underwater networking project

Dec. 2014 **Boy Scouts of America**, Eagle Scout (Bronze Palm)