

Jake Messner

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EDUCATION

NORTHEASTERN UNIVERSITY | BS IN ELECTRICAL AND COMPUTER ENGINEERING

Expected May 2019 | Boston, MA

GPA: 3.5 / 4.0

Activities: HuskyHacks (Co-Founder) | IEEE (PR Rep) | Husky Ambassador Tour Guide | Wireless Club | AIAA | NUHacks

Honors and Awards: University Scholars Program (Top 1-2% of Applicants) | Dean's List |

MakeBU Hackathon First Place | HackNY Third Place | MakeCU Second Place | First Place Health PennApps

Relevant Coursework: Electromagnetics | Machine Learning | Noise and Stochastic Processes | Linear Systems | Digital Design | Computer Organization | Circuits and Signals | Differential Equations | Sensing and Navigation | Networks | Engineering Algorithms

EXPERIENCE

APPLE | WIRELESS DESIGN INTERN | JUL 2017 – DEC 2017 | CUPERTINO, CA

- Troubleshoot and identified root causes of issues for cellular and GNSS failure analysis.
- Selected and reworked components for PCB impedance matching using Keysight ADS simulation data.
- Used Ansys HFSS and SIWave to build and execute RF simulations for future PCB designs.

GREENSIGHT AGRONOMICS | EE INTERN/REMOTE PILOT | MAY 2017 – JUNE 2017 | BOSTON, MA

- Piloted test and customer flights remotely using APM autopilot systems.
- Designed and developed manufacturing process for endurance drone to achieve over 40 minute flight time.
- Worked with Python, Photoscan, and QGIS to do automated and manual stitching of geotagged drone images.

STARRY, INC. | RF/EE INTERN | JUL 2016 – DEC 2016 | BOSTON, MA

- Designed and developed RF test configurations to measure EVM, compression, gain, and phase.
- Trained vendors to do module manufacturing and bring-up.
- Wrote LabView and Visual Basic software for autonomous data acquisition.

DEPARTMENT OF HOMELAND SECURITY REU | RESEARCHER | JUN 2015 – JUNE 2016 | BOSTON, MA

- Designed, fabricated, and implemented a system for hallway-based millimeter wave imaging.
- Calibrated and troubleshoot transmitter and receiver PCBs using oscilloscope and soldering equipment.
- Utilized SolidWorks to design mechanical assemblies and MATLAB to write radar imaging simulation programs.

SKILLS AND INTERESTS

Engineering / Software: Cadence Allegro, Network Analyzer, Spectrum Analyzer, LitePoint, 3D Modeling, 3D Printing, EAGLE, Microsoft Office, C, C++, MATLAB, Verilog, Arduino, Python, SPI, I2C, Ansys, SMD Soldering (01005, BGA)

Certifications: FAA Remote Pilot (3985666), FCC Amateur Radio General (KD2IQR)

Other: DIY Electronics, Skiing, Boston Boys and Girls Club Tutor and Robotics Teacher

PROJECTS

"DEMENTOR" AUTONOMOUS UAV [DEVPOST.COM/SOFTWARE/DRONETECH](https://devpost.com/software/dronetech)

Apr 2017 - Dec 2017 | Boston, MA

- Designed and constructed drone to execute flight paths, land, and charge autonomously using Ardupilot.
- Setup Qualcomm 4G dongle reverse ssh tunnel to communicate with drone wirelessly over Mavproxy without range limitation.
- Designed and constructed system to hot swap end effectors using nickel plated magnetic contacts.

PONG OVER LASER LINK | PONGLASER.NET

Feb 2016 | Columbia University - New York, NY

- Programmed Arduino to transmit data via laser link (LiFi) at 2.4kHz and receive data sent by slave device laser.
- Designed and constructed laser transmitter circuit, phototransistor receiver circuit, and ADC.
- Optimized Tx accuracy and redesigned product using ATmega328 microcontrollers to demo at Atmel Road Show 2016.