Anthony Bisulco

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Education

Cornell Tech — *New York City, NY*
Candidate for a Master in Electrical and Computer Engineering — *Aug. 2018 - Present*
Concentration in Signal Processing and Machine Learning

Northeastern University — *Boston, MA*
Bachelor of Science in Electrical and Computer Engineering (3.97/4) — *Sept. 2014 - May. 2018*
Activities: Department of Homeland Security Student Leadership Council, Institute of Electrical and Electronics Engineers, Northeastern Program for Teaching Undergraduates, Tau Beta Pi, and Eta Kappa Nu

Experience

Brookhaven National Laboratory — *Brookhaven, NY*
Research Scientist — *June. 2018 - Aug. 2018*
- Developed fast **Python** Time of Flight(TOF) signal processing algorithms for a 10ps TOF detector using **NumPy, SciPy, and JupyterLab**
- Implemented Python parameter optimization algorithms using **Dask**(distributed computing library)
- Designed a constant fraction discriminator algorithm to reduce TOF electronics' delay from 64ps to 8ps

Sensing, Imaging, Control and Actuation Laboratory — *Boston, MA*
ALERT Gordon-CenSSIS Scholar/Undergraduate Researcher/REU (2016) — *Sept. 2014 - May 2018*
- Developed an FPGA control system for a **multiple-input multiple-output** radar system with 400 channels
- Implemented **simulated annealing** and **compressive sensing** methods for a coded imaging system
- Implemented a fused millimeter/infrared imaging system for target validation

Singh Robotics Laboratory — *Boston, MA*
Systems Integration Engineer — *Jan. 2017 - May. 2018*
- Implemented a **visual**-based **navigation** technique for GPS denied urban areas using computer vision
- Integrated Velodyne LIDAR and 5 Point Grey Cameras into ROS for light field array

Google Research and Machine Intelligence — *Mountain View, CA*
Embedded Engineer — *July 2017 - Dec. 2017*
- Performed transfer learning in **Tensorflow** to retrain models for audio and image recognition
- Developed AIY vision kit an on-device **neural network** accelerator for computer vision
- Assisted in rapid prototyping/full scale manufacturing process of developing units
- Traveled **internationally/nationally** for demoing and marketing AIY kits to distributors

European Organization for Nuclear Research (CERN) — *Genevè, Switzerland*
ATLAS Systems Engineer — *Sep. 2016 - Dec. 2016*
- Developed array synthesis algorithms for multi-anode **photomultiplier tubes**
- Designed and 3D printed a fiber light guide for 85% increased sensor coverage of the photomultiplier tube
- Built Spectrum a web application for laboratory simulation and experimental data comparison

Massachusetts Institute of Technology Lincoln Laboratories — *Lexington, MA*
Summer Researcher — *May. 2015 - Aug. 2015*
- Adapted MATLAB image processing algorithms to an **FPGA** for a UAV Micro-LIDAR
- Developed and implemented a configurable FPGA moving average filter for Avalanche Photo Diodes (APD)

Selected Publications

- A. Molaei, K. Graham, L. Tirado, A. Ghanbarzadehdaghe Dagheyan, **A. Bisulco**, J. Heredia-Juesas, C. Liu, J. Von Holten, J.A. Martinez-Lorenzo, "Experimental Results of a Compressive Reflector Antenna Producing Spatial Coding," IEEE Antennas and Wireless Propagation Letters, submited
- A. Molaei, **A. Bisulco**, L. Tirado, A. Zhu, D. Cachay, A. Ghanbarzadehdaghe Dagheyan, J.A. Martinez-Lorenzo, "3D Printed E-Band Compressive Horn Antenna for High-sensing-capacity Imaging Applications," IEEE Antennas and Wireless Propagation Letters, Jul. 2018.
- **A. Bisulco**, L. Tirado, S. Patel, L. Annese, G. Ghazi and J.A. Martinez-Lorenzo, "Massive MIMO Millimeter Wave Radar Imaging System," IEEE APS/URSI July 2016, Puerto Rico, presented

Skills

Programming/Software: Python, MATLAB, C++, Verilog, SolidWorks

Technical Skills: • Signal Processing • Data Analytics • Machine Learning • Compressive Sensing • Radar • Remote Sensing • Robotics • FPGA/Microcontroller Programming • GPU Computing(Numba)

Honors: • Eagle Scout • Stanford Solar Science award • Best Embedded Hack at Columbia Hackathon

Interests: • Traveling • Hiking • Boating • Photography • Cooking