Anthony Bisulco

arb426@cornell.edu | www.abisulco.com | anthonytec2 | anthony-bisulco

Education

Cornell Tech at Cornell University *New York, NY*
Master of Engineering in Electrical and Computer Engineering *Aug. 2018 - May 2019*
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

Samsung Research America *New York, NY*
Machine Learning Researcher, Advisors: Daniel D. Lee & Sebastian Seung *July 2019 - Present*
- Developed a FPGA accelerator using HLS and Chisel for low-bandwidth pedestrian detection on edge devices using **neuromorphic vision sensors**
- Implemented laboratory infrastructure: code management, compute cluster management and networking

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
- 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

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
- Developed a mobile manipulation platform focusing on visual navigation/manipulation using the UR-10 manipulator, Point Grey Cameras and the Warthog robot platform

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

European Organization for Nuclear Research (CERN) *Meyrin, 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

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

- F. Cladera, **A. Bisulco**, D. Kepple, V. Isler and D. Lee, "On-device Event Filtering with Binary Neural Networks for Pedestrian Detection Using Neuromorphic Vision Sensors," IEEE-ICIP 2020 under review
- R. Elder, B. Eisner, D. Yang, **A. Bisulco**, E. Mitchell, S. Seung and D. Lee, "Reward Prediction Error as an Exploration Objective in Deep RL," IJCAI 2020 under review
- 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, Chisel, C++, 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