

Anthony Bisulco

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Education

Cornell Tech at Cornell University

MASTER OF ENGINEERING IN ELECTRICAL AND COMPUTER ENGINEERING
Concentration in Signal Processing and Machine Learning

New York, NY
Aug. 2018 - May 2019

Northeastern University

BACHELOR OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING (3.97/4)

Boston, MA
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 Artificial Intelligence Center

MACHINE LEARNING RESEARCHER, ADVISORS: DANIEL D. LEE & SEBASTIAN SEUNG

New York, NY
July 2019 - Present

- Developed a FPGA accelerator using HLS and Chisel for low-bandwidth pedestrian detection on edge devices using **neuromorphic vision sensors**
- Implemented hyperparameter tuning solution for QXplore: a novel based reinforcement learning algorithm

Brookhaven National Laboratory

RESEARCH SCIENTIST

Brookhaven, NY
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

ALERT GORDON-CENSSIS SCHOLAR/UNDERGRADUATE RESEARCHER/REU (2016)

Boston, MA
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

SYSTEMS INTEGRATION ENGINEER

Boston, MA
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

EMBEDDED ENGINEER

Mountain View, CA
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)

ATLAS SYSTEMS ENGINEER

Meyrin, Switzerland
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

SUMMER RESEARCHER

Lexington, MA
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

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