# Brian Hosler

Brian@drexel.edu

## Work Experience

April 2017 – Present

Drexel University - MISL

### *Research Assistant*

Implementation, training, and evaluation of digital forensics tools by applying machine learning techniques. Image manipulation using Python and OpenCV. Implementation of convolutional neural network and constrained convolutional layer using Caffe and Python.

September 2016 – April 2017

BMW - Information Technology Research Center

### *Innovation Lab Engineer*

Installation, configuration, and use of Cuda and cuDNN for hardware accelerated learning. Explore and assess use cases for new technologies for internal use. Development and exploration of virtual and augmented reality applications and demonstrations for internal showcases. Programming and training of artificially intelligent system for assisting employees with common issues, for use by human resources.

April 2015 – Present

Drexel University - DMML

### *Research Assistant*

Construction, programming, and maintenance of automatic device for studying dynamic fatigue of generic materials. Design and construction of triggering circuits to operate precise, high-speed devices.

September 2015 – April 2016

iHeart Media - San Francisco, CA

### *Studio Engineer*

Construction of custom recording and broadcast studios for on-air radio. Maintenance and repair of studio equipment including amplifiers, speakers, and controllers. Implementation of video and information routing system including custom circuit and logic design.

September 2014 – April 2015

Drexel University - MAX & MXene

### *Research Assistant*

Discovery and characterization of new 3D and 2D materails. Build and repair high-temperature furnaces, hydraulic press, and vacuum pumps. Training with corrosive acids and hazardous materials. Optimization of milling and delaminating procedures to increase production.

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## Technical Skills

| | |
|---|---|
| Proficient | Python, Bash, C, LaTeX, Linux(RedHat, Ubuntu, Arch), ssh, vim, MatLab, Java, Microsoft Office |
| Intermediate | Caffe, git, gcc, X11, Simulink, ExpressPCB, PSPICE, Virtuoso |
| Basic level | Tensorflow, Windows, LMDB, Arduino |
| Hardware | Oscilloscope, Spectrum Analyzer, Soldering, Arduino, Raspberry Pi, 3DPrinter, IC's |
| Tutoring | Semiconductor Physics, Transform Methods, Digital Signal Processing, Systems Programming |

## Education

2013 – 2018 **Drexel University**
Bachelors of Science
*Electrical Engineering*

GPA: 3.45
Major GPA: 3.9

## Publications and Awards

ACS Nano - Cover
Two-Dimensional, Ordered, Double Transition Metals Carbides (MXenes)

Journal of Applied Physics
Experimental and theoretical characterization of ordered MAX phases $Mo_2TiAlC_2$ and $Mo_2Ti_2AlC_3$

Blasi Family Endowment Award

Dean's List 2015, 2016, 2017

## Senior Design Project

September 2017 – June 2018

Drexel University

### *Signal Processing and Learning*

Using Caffe and Python to implement a real-time autonomous and generic tracker- robust against rotation, scale variance, and occlusions.