

# Josh Booth

(717) 494-6466  
boothjmail@gmail.com  
Chandler, AZ

## WORK EXPERIENCE

### Applications/Marketing Engineer | Microchip Technology

CURRENT, FROM JUN 2022 (FT)

- Developed various demos on PIC and AVR microcontrollers.
- Wrote production-quality embedded C code for customers to use as reference.
- Developed microcontroller libraries for abstracted use.
- Created PCBs and structural enclosures for the demos.
- Led an analytics initiative that produced to better data-driven decisions about our marketing campaign strategies.

### Electrical Engineer | United States Naval Research Laboratory

JUN 2017 - JAN 2022 (FT/PT)

- Used python for various machine learning and data analytic projects such as:
- Detecting and classifying objects in satellite imagery.
- Recovering RF communications lost to noise (BRNN w/ GRU cells.)
- Identifying promotor sequences in DNA to speed-up genome sequence identification (BRNN w/ LSTM cells.)

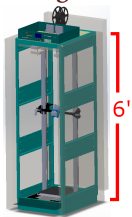
### Prototype Engineer | Booth Oil and Gas LLC.

SEP 2016, JUN 2022 (FT/PT)

- Designed and manufactured prototypes for novel business problems (see 3D PEEK Printer, AI-Driven Security System).
- Offered technical expertise for project planning, cost estimation, and feasibility studies.
- Communicated with the client to manage their expectations and incorporate or remove features as their needs changed.

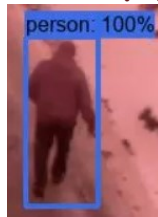
## EMBEDDED DEVELOPMENT PROJECTS

#### DMX Light Show %



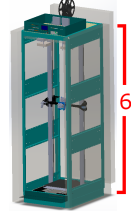
A real-time audio processing light show integrating audio filtering, DMX, PoE, and a hardware-encoded WS2812 driver.

#### AI-Driven Security System %



AI-driven solar-powered security system that gives real-time alerts with a classified video anytime a human, vehicle, or large animal is spotted on the property.

#### 3D PEEK Printer %



Large-scale 3D printer capable of printing PEEK for biofuel refinement.

#### The Cold Plate %



A reference design showing the most efficient way to perform common microcontroller tasks on a PIC16; It is Microchip's most copied code repository.

## PUBLICATIONS

- 2023 App. Note 4889: Using Core Independent Peripherals (CIPs) to Implement a Peltier Cooled Metal Plate %
- 2023 Embedded.com - Reducing BOM cost in embedded systems using advanced MCU peripherals %
- 2018 Machine Learning in Radio Frequency Communications %
- 2017 Prediction of Bacterial Promoter Sequences using Machine Learning %

## EDUCATION

- 2018-2022 **Computer Engineering; Mathemtics minor**  
SUMMA CUM LAUDE; 3.98 GPA; COMP ORG SI  
Bachelors of Science  
*Shippensburg University of Pennsylvania*

## AWARDS

- 2020 Secret Security Clearance (inactive Mar 2022)
- 2018 Eagle Scout
- 2017 CompTia A+ Certified