

# MATTHEW WNUK

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## WORK HISTORY

### **Machine Learning Project Engineer – SPAWAR**

**January 2016 to Present**

- Project Lead – Radio Frequency Machine Learning Systems
  - Dataset Curation for machine learning applications to the RF domain
  - Deep learning architecture design for signal discrimination
  - GAN design for modulation classifiers
- Project Lead – Machine Learning for Ship’s Self Defense
  - Dataset cleaning
  - Radom forest classifier for classification using RF parametrics
- New Professional Trainer – Machine Learning
  - Topics include: regression, gaussian classifiers, dimensionality reduction, unsupervised learning, deep learning, gradient descent

### **Graduate Student Researcher – UCSD Drone Lab**

**January 2018 to June 2018**

- Python Software development for Intel Aero Embedded Linux Environment
  - low level peripherals such as IMU & Magnetometer via SPI and I2C
  - 9DOF Sensor Fusion for quaternion orientation via Madgwich Filter
  - Feature extraction and projection using Intel-Realsense RGBD camera

### **Signal Processing Engineer – AUVSI Robosub Competition**

**June 2014 to December 2015**

- Designed and Built Custom Sonar System for Signal Localization
  - Analog signal conditioning
  - Coded 16-bit DSP for direction of arrival algorithm in embedded C

### **Hardware Engineer Intern – NASA Langley Research Center**

**May 2015 to August 2015**

- Assisted in redesign of next generation optical receiver for advanced LIDAR systems
  - Circuit design using RF design principals
  - PCB Layout in Altium Design Suite

### **RF Engineer Intern – Northrop Grumman**

**June 2014 to January 2015**

- Software Development for Automation
  - Macros for HFSS written in python
  - Matlab scripting for development of database tools

### **Sonar Technician – United States Navy**

**July 2004 to August 2013**

## EDUCATION AND HONORS

### **Masters of Science in Electrical Engineering**

University of California San Diego

**June 2018**

### **San Diego State University, San Diego CA**

Bachelor of Science in Electrical Engineering

**December 2015**

**Eta Kappa Nu (HKN) electrical engineering scholastic honor society – President**  
**Tau Beta Pi (TBP) interdisciplinary engineering honor society**