

About Me

As an established machine learning engineer and software developer, my aim is to apply artificial intelligence at the cutting edge and perpetually increase my expertise in the disciplines of machine learning and computer science.

Education

Bachelor of Science in Computer Science

George Mason University, Honors College - 2017

Skills

Machine Learning

Deep Learning
Reinforcement Learning
Neural Network Design
Linear Algebra, Statistics

Frameworks

PyTorch
TensorFlow
Keras
SciKit Learn

Languages

Python
Java
JavaScript

Environments

Jupyter Notebook
Docker
PyCharm

Experience

Machine Learning Engineer Next Century

February 2019 - Present

- Machine Learning research that lead to increased accuracy and correlation of image manipulation detection and DeepFake detection through Machine Learning Data Fusion on DARPA Media Forensics Program
Model development and research in PyTorch and TensorFlow.

Associate Software Engineer Innovative Defense Technologies

July 2013 - January 2019

- Architected a cost-effective system for stress testing and benchmarking scalable distributed micro services and streaming platforms.
Docker, Apache Bench, JMeter, other stress testing tools
- Ongoing customer site integration and product support
- Designed and constructed a comprehensive Continuous Integration (CI) Pipeline and development suite
Jenkins, GitLab, Nexus, Jira, HipChat, Apache email
- Machine Learning powered intelligent storage, sorting, and deletion of image files based on relevancy and task importance in a space constrained environment.
Python, SQLite

- Technical writer on SBIR proposal team
- Executed STIG security compliance test to ensure software had been hardened to cyber security threats
Nessus, WireShark
- Discovered system vulnerabilities in a highly reduced timeframe via Machine Learning powered genetic algorithm fuzz testing.
Python, genetic algorithm
- Improved optical character recognition (OCR) on low resolution imagery
Java, Tesseract (OCR tool), statistical modeling
- Plot vehicle locations on NASA's WorldWind open source map
- Automated testing, unit testing and bug fixes
Java, JUnit, ECLEmma

Personal Projects

Kaggle Contributor

kaggle.com/ottpeterr

Over 99% accuracy on hand written digit classification (MNIST Dataset)

2D conv. net, Keras

Accurate detection of fraudulent credit card purchases with data oversampling

Random forest, neural net, Keras

Taxi Fare prediction for New York taxi rides

Dataset of 50,000,000 rows with only 12GB of RAM

Pneumonia detection through on x-ray images with generated imagery

2D conv. net, image generation for training

Hobbies and Interests

Raspberry Pi

Spanning HomeAssistant installation

Light Control, Security System, Device Tracking, Home Server

Home surveillance camera Raspberry Pi with chat bot integration

Python, Telegram (chat platform)

Current Project: TinyRL, small RL projects that can be run on a Raspberry Pi

TensorFlow

- Home Automation

Various Raspberry Pi's running home surveillance cameras, network wide ad-blocking, smart light control, presence detection, family location sharing and more!

MX-5 Miata

It's my daily car but also my weekend project car. Ask me about it!

