ALEX THORNTON

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EDUCATION

Columbia University — New York, NY
Master of Science in Electrical Engineering, GPA: *3.82/4.00* — May 2022
Specialization: Data-Driven Analysis & Computation
Notable Coursework: High-Dimensional Data Analysis, Deep Learning, Reinforcement Learning, Big Data Analytics

Binghamton University — Binghamton, NY
Bachelor of Science in Electrical Engineering, GPA: *3.87/4.00* — May 2019
Honors: Summa Cum Laude | Tau Beta Pi | Eta Kappa Nu | Phi Eta Sigma

TECHNICAL SKILLS

Software	C/C++, Python, Linux, Docker, Hadoop, Spark, SQL, DSP, Tensorflow, PyTorch, MATLAB, Big Data, Google Cloud, AWS, Convex Optimization, Speech Recognition
Hardware	Cadence Virtuoso, SPICE, Analog/ Digital IC Design, Compressed Sensing, 5G

PROFESSIONAL EXPERIENCE

Lockheed Martin — Syracuse, NY
Machine Learning Engineer — Sep 2021 - Present
- Designed PyTorch CNN and LSTM models for IRAD submarine electronic warfare application
- Transitioned data pipeline to modern AWS data lake with MySQL tables for storage and computation

Engineering Leadership Development Program / Software Engineer — Feb 2021 - Sep 2021
- Developed technical and soft skills through rigorous 10-month team lifecycle project and conferences
- Wrote GitLab runner continuous integration/ development shell scripts for lab automation
- Upgraded synthetic aperture radar (SAR) software interface for firmware and hardware upgrade

Systems Engineer Associate — Jun 2019 - Feb 2021
- Delivered technical demonstration as lead systems engineer for prospective $6 million contract
- Created GUIs and MATLAB tools for helicopter flight simulators and data analysis tools

SRC, Inc. — North Syracuse, NY
Radar Engineering Intern — May 2018 - Aug 2018
- Modelled, analyzed, and verified system design and system performance for advanced radar systems
- Implemented signal processing and data analysis algorithms in MATLAB and Python

PROJECTS

SpotifyClassifier
- Top paper & student voted 2nd best research project at Columbia University Big Data Analytics Expo – Fall 2021
- Devised machine learning model to interface with Spotify API to classify track genres from song name only
- Performed novel subgenre interconnectivity graphical analysis from track recommendation collisions

Learning to Learn - Math Word Problem Kaggle Competition
- Ranked 3rd place in deep learning Kaggle class competition at Columbia University – Summer 2021
- Trained GPT-2 and graph2tree language models to solve math word problems

Auto-Tune Application
- Designed GUI to play back and visualize audio inputs pitch corrected to a specific piano key or nearest note
- Developed signal processing technique to efficiently filter and pitch shift audio signals without loss of sound quality

ADDITIONAL HONORS

- Eagle Scout - Boy Scouts of America, 2013