**Alex Thornton**

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**Technical Skills**

*Software:* C/C++, Python, Linux, Docker, TensorFlow, Deep Reinforcement Learning, ML/ AI, Algorithms, DSP, MATLAB

*Hardware:* 5G/ mm Wave Technology, Cadence Virtuoso, SPICE, Analog/ Digital IC Design, Communication Systems

**Professional Experience**

**Lockheed Martin,** Owego, NY

*Engineering Leadership Development Program* Aug. 2020 – Present

* Developed technical and leadership skills through conferences, mentoring, coursework, and a rigorous lifecycle project
* Three-year program consisting of rotational assignments in various engineering disciplines

*Software Engineer II* Mar. 2021 – Present

* Introduced customizable Linux shell scripts to automate GitLab runner continuous integration/ development in lab
* Transitioned synthetic aperture radar (SAR) software interface for firmware and hardware upgrade

*Systems Engineer I* June 2019 – Aug. 2020

* Delivered technical demonstration as lead systems engineer for prospective $6 million contract
* Created and improved GUIs and MATLAB tools for flight simulators and data analysis tools
* Designed algorithms to meet customer requirements using electronic warfare techniques
* Integrated, tested, and verified system capabilities in classified lab environment

**SRC, Inc. – Radar and Sensors Group,** NorthSyracuse, 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 (e.g. trackers, detectors, etc.) in MATLAB and Python for computer simulation models of products

**National Grid – Substation Engineering Group**, Syracuse, NY

*Substation Engineering Design Intern* May 2017 – Aug. 2017

* Analyzed impedance and load values in several stations to optimize the design of DC backup battery systems
* Created automated Bill of Materials database, fully integrated with over 500 frequently purchased materials

**Education**

**Columbia University**, School of Engineering and Applied Science (SEAS), New York, NY

*Master of Science in Electrical Engineering,* 3.67/4.00Expected May 2022

Specializations: Machine Learning and Integrated Circuits

**Binghamton University**, Watson College of Engineering and Applied Science, Binghamton, NY

*Bachelor of Science in Electrical Engineering, Summa Cum Laude,* 3.87/4.00Conferred May 2019

Honors: Tau Beta Pi | Eta Kappa Nu | Phi Eta Sigma | Dean’s List: 8 Consecutive Semesters

**Cornell University**, College of Engineering, Ithaca, NY

*Continuing Education – Systems Engineering,* 4.15/4.00Completed Aug. 2021

**Project Experience**

**Amplitude Modulation Transmitter Chip,** New York, NYMar. 2021 – Apr. 2021

* Designed AM transmitter integrated circuit from commercially available components, simulated in LTSpice
* Utilized class D amplification stage for high power efficiency, and audio transformer/ amplifier for max modulation depth
* Implemented impedance matching and filtering at output to optimize power at desired bandwidth and reject harmonics

**Auto-Tune Application,** New York, NYNov. 2019 – Dec. 2019

* 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**

**Guest Speaker – Lockheed Martin AI Summit 2021– Inverse Reinforcement Learning**, New York, NY July 2021

**Active United States DoD Security Clearance – SECRET**, Syracuse, NY June 2018

**Eagle Scout – Boy Scouts of America**, Ogden, NY May 2013