

# Alex Thornton

444 Front Street, Suite 2, Owego NY 13827

C: (585) 362-9601 | O: (607) 751-7457 | [a.thornton@columbia.edu](mailto:a.thornton@columbia.edu) | [linkedin.com/in/alex-thornton](https://www.linkedin.com/in/alex-thornton)

## 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, 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 (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, 3.67/4.00*

Expected 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, 3.87/4.00*

Conferred 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, 4.15/4.00*

Completed Aug. 2021

## Project Experience

### Amplitude Modulation Transmitter Chip, New York, NY

Mar. 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, NY

Nov. 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