

# Andrew Kim

**E-mail:** andrew.taehon.kim@gmail.com | **Cell:** 646-749-6801 | **Website:** <https://andrewtaehonkim.github.io>

## Education

Dual Degree Masters and Bachelor of **Chemical Engineering** — Cumulative GPA: 3.9 — Projected May 2025

Cooper Union for the Advancement of Science and Art, NY, NY, 10019

Tau Beta Pi Fellow, IDC Foundation Innovation Fellow, Dean's List

## Work Experience

**Core Technology Intern**, OLI Systems, USA

Summer 2024

- Trained machine learning models (neural networks and evolutionary algorithms) to predict alloy corrosion for implementation in commercial software.
- Created documentation and tests to communicate the implementation, capabilities, limitations, and next steps for final product development by the team.

**Research Assistant**, Yonsei University, Korea

2021-2023

- First-author on 10 scientific articles in prestigious journals while serving in the Korean Military during COVID-19.

**Military: Elderly Care Aide & Fitness Coordinator**, Republic of Korea Military, Korea

2021-2023

- Awarded a prestigious certificate for outstanding military service and exemplary character by the Mayor of Seoul (2023).
- Planned and led daily fitness programs for seniors with Alzheimer's and physical disabilities.

## Major Projects at the Cooper Union

**Carbon Capture from Air Using Electrospun Polymer Fibers**. PI: Dr. Amanda. Simson

2023-present

- Optimized polymer fiber composition to maximize CO<sub>2</sub> absorption and stability. Publication of work in progress.

**Modeling Surface Adsorption Phenomena for Batteries**. PI: Dr. Robert Q. Topper

2023-present

- Simulated the behavior of sulfur intermediates on adsorptive material surfaces to improve the stability of sodium-sulfur batteries.

**Designing Airplane Drones for International Flight Competition**. PI: Dr. Dirk Luchtenberg

2023-present

- As vice president, lead the computational simulation, propulsion, and safety in manufacturing a RC airplane drone to compete against over 100 teams worldwide.

**Air-safe Lithium Ion Battery Fabrication**. PI: Dr. Marwan Shalaby

2024

- Created and tested safe lithium ion batteries that do not react aggressively with air.

**Investigation of Industrial-scale Polyvinyl Chloride (PVC) Manufacturing**. PI: Dr. Jennifer Weiser

2024

- Researched and presented on the manufacturing of PVC, specifically for implementation in window frames.

**Electrochemical Carbon Capture Proposal**. PI: Dr. Marwan Shalaby

2024

- Designed and proposed retrofitting an absorption column at the Cooper Union for carbon capture.

**Graphical User Interface for Molecular Dynamics Simulator**. PI: Dr. Robert Q. Topper

2023

- Designed a cross-platform app to visualize the input files of the molecular dynamics simulator to increase user accessibility.

**Optimization of Sediment Microbial Fuel Cells Using 3D printing**. PI: Dr. Amanda. Simson

2021-2022

- Designed a microbial fuel cell reactor to maximize electricity produced by bacteria in local river sediment as a renewable energy source (work published in 2022).

**Novel Airflow Device Invention**. PI: Dr. Alan Wolf

2019-2020

- Co-invented a doorfan that enables air conditioning to be shared between adjacent rooms with the connecting door closed to improve air conditioning efficiency and air quality (patent application submitted in 2019 and pedagogical work published in 2020).

## Leadership at the Cooper Union

**President of Tau Beta Pi**, Oldest engineering honor society in the United States.

2024-present

- Oldest U.S. engineering honor society eligible for students at the top of their class who possess excellent character.
- Awarded the prestigious Tau Beta Pi fellowship worth \$10,000 for promising ability to contribute to the engineering profession.

**President of The Chemists' Club**, Founded in 1898 in NYC to promote networking within the chemical industry.

2020-present

- Organized networking opportunities with professionals in the chemical industry between 7 universities within the NYC region.

**President of Omega Chi Epsilon**, Chemical engineering honor society.

2024-present

## Software, Equipment, and Other Skills

**Software:** Python, C++, OLI Studio, ANSYS Workbench, Excel, SolidWorks, Gaussian09, ORCA

**Equipment:** Thermogravimetric Analyzer, Potentiostat, Electrospinner, 3D printer, HPLC, <sup>1</sup>H NMR, Tube Furnace, FTIR, UV-Vis

**Technical:** Machine learning, computational chemistry, computational fluid dynamics, patent writing, web design, graphic design