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_2 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 conditing 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, ^{1}H NMR, Tube Furnace, FTIR, UV-Vis
Technical: Machine learning, computational chemistry, computational fluid dynamics, patent writing, web design, graphic design