

# Anna Li

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## EDUCATION

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**Princeton, NJ,**

Ph.D. in Mechanical and Aerospace Engineering

August 2024 - Present

**Caltech, CA, GPA: 3.9**

B.S. in Engineering and Applied Sciences

September 2019 - June 2023

## SKILLS AND COURSEWORK

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**Skills:** Python, R, Java, MATLAB, Mathematica, Linux, Solidworks

**Relevant Coursework:** Economics of Sustainable Development, Intro to Finance, Politics and Regulation, Sustainable Engineering, Learning Systems, Probability Models, Bayesian Statistics, Applied Linear Algebra

## WORK AND RESEARCH EXPERIENCE

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**Energy Analytics Intern | BrightNight**

Summer 2023 - Spring 2024

- Performed data analytics and optimization, employing Python for statistical analysis and visualization to enhance decision-support for renewable energy projects
- Developed methods for assessing risk and revenue uncertainty, contributing to more accurate forecasting and improved planning for customer cases

**Research Assistant | Carnegie Institution for Science**

Summer 2021 - Fall 2023

Advisors: Dr. Ken Caldeira, Prof. Nathan S. Lewis | Stanford, CA

*Macro-scale Energy System Modeling:*

- Used macro-scale energy modeling to analyze value of different energy storage portfolios in renewable energy systems
- Conducted a techno-economic analysis of low-carbon storage technologies on the market
- Published study demonstrating the dual role of long-duration energy storage in balancing both long-term and short-term energy needs

**Undergraduate Researcher | Caltech**

Summer 2021 - Winter 2022

Advisor: Prof. Nathan S. Lewis | Pasadena, CA

*Electrochemistry Research on Hydrogen Fuel Production*

- Demonstrated the long-term activity and stability of earth-abundant oxygen evolution catalysts for applications in water-splitting to produce hydrogen
- Performed electrodeposition of inorganic films to protect against semiconductor corrosion in photoelectrochemical water-splitting cells

## PUBLICATIONS

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### **The influence of regional geophysical resource variability on the value of single- and multi-storage technology portfolios**

*"ACS Environmental Science and Technology," Accepted June 2024*

Li, A. X.; Virguez, E. A.; Dowling, J. A.; Wongel, A.; Covelli, D.; Reich, N. D.; Ruggles, T. R.; Lewis, N. S.; Caldeira, K.

### **Opportunities and constraints of hydrogen energy storage systems**

*"Environmental Research: Energy," June 2024*

Dowling, J. A.; Ruggles, T. R.; Virguez, E. A.; Reich, N. D.; Ifkovits, Z. P.; Davis, S. J.; Li, A. X.; Kennedy, K.; Caldeira, K.; Lewis, N. S.

### **Catalysis of the Oxygen-Evolution Reaction in 1.0 M Sulfuric Acid by Manganese Antimonate Films Synthesized via Chemical Vapor Deposition**

*"ACS Applied Energy Materials," March 2024*

Dowling, J. A.; Ifkovits, Z. P.; Carim, A. I.; Evans, J. M.; Swint, M. C., Ye, A. Z.; Richter, M. H.; Li, A. X.; Lewis, N. S.

## AWARDS AND HONORS

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- NSF GRFP Fellowship 2024
- Poster Finalist at the 2022 INFORMS Annual Meeting 2022

## CONFERENCES AND PRESENTATIONS

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### **Relative Value of Short-, Mid-, and Long-Duration Storage Technologies in Reliable Wind and Solar Electricity Systems**

- Oral and Poster Presenter | Macro Energy Systems Workshop | Stanford, CA Summer 2022
- Poster Presenter | Institute for Operations Research and the Management Sciences | Indianapolis, IN Fall 2022
- Poster Presenter | American Geophysical Union | Chicago, IL Fall 2022

### **Passivation of Physical Defects in TiO<sub>2</sub> Thin Films Through Targeted Electrodeposition**

- Oral Presenter | Summer Undergraduate Research Fellowship Seminar Day | Pasadena, CA Summer 2021

### **Understanding Photoassembly and Oxygen Evolution in Photosystem II through Molecular Dynamics and Quantum Mechanics**

- Oral Presenter | Summer Undergraduate Research Fellowship Seminar Day | Pasadena, CA Fall 2020

## TEACHING EXPERIENCE

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### Teaching Assistant, Sustainable Engineering | Caltech

Winter 2023

- Assists in teaching a course aimed at developing a global perspective of sustainability for undergraduate and graduate engineering students
- Develops course lecture materials and assignments
- Holds office hours to help students with problem sets and writing assignments

### Lead Tutor, Dean's Chemistry Tutoring | Caltech

Fall 2021 - Spring 2022

- Conducted bi-weekly chemistry tutoring sessions for underrepresented and/or underserved first-year students and weekly tutoring for the introductory chemistry course at Caltech

### Tutor | Caltech Y Rise Program

Winter 2020 - Spring 2021

- Tutored local public school students who struggle in math and science through the low-cost Caltech Y Rise afterschool program

## LEADERSHIP AND SERVICE

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### Student Representative | Academics and Research Committee | Caltech

Winter 2020 - Spring 2023

- Acted as liaison between students and faculty to improve the undergraduate academic experience by handling course concerns and offering academic support to students