Kayoko Thornton

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Education

Cornell University, College of Engineering Ithaca, NY
Bachelor of Science, Mechanical Engineering. GPA: 4.197/4.30 Aug 2023 – Dec 2026
Relevant Coursework: Mechanics of Engineering Materials, Intro to Fluid Mechanics, System Dynamics, Statistics, Waves, Thermodynamics, Statics & Mechanics of Solids

Experience

Energy Research Lab Cornell University
Undergraduate Researcher Sept 2025 – Present

- Conduct weekly hands-on experiments to optimize a multistage passive cooling system driven by salinity gradients
- Collect and analyze data to determine the impact of stage count, saline concentration, and air gap thickness on the cooling performance
- Aim to couple the cooling device with a solar distiller to increase efficiency

ENGRD 2210: Thermodynamics, Dept. of MAE Cornell University
Undergraduate Teaching Assistant Sept 2025 – Present

- Assist students during weekly discussion sections by presenting course topics, explaining problem-solving strategies, and answering questions
- Hold office hours to provide one-on-one academic support
- Manage logistical tasks such as answer key write-ups and test scanning to support efficient and timely feedback

Staged Pressurized Oxy-Combustion (SPOC) Lab Washington University in St. Louis
Thermal Energy Management on Multiple Scales REU Fellow June 2025 – Aug 2025

- Studied radiative heat transfer and carbon-negative biomass combustion
- Researched and validated a thermal imaging camera for SPOC system monitoring
- Developed a MATLAB script with Modbus TCP protocol for real-time alarm optimization
- Presented at the End-of-Summer Symposium and Poster Palooza

Symbiotic Engineering and Analysis Lab Cornell University
Undergraduate Researcher Sept 2024 – May 2025

- Simulated co-located 5 MW wind turbines with various wave energy converters and mooring configurations in WEC-Sim (MATLAB)
- Evaluated performance of wind-wave systems by calculating LCOE and developing data processing scripts
- Validated mooring system recommendations to optimize coupling with wind turbines

Plant Polytunnel Design Cornell Botanic Gardens
Independent Study Jan 2024 – May 2024

- Researched and drafted designs in AutoCAD for a modifiable, greenhouse-like structure
- Outlined the budget for materials and supplies

Skills

- **Technical**: R, Python, Java, MATLAB, Fusion, AutoCAD, Word, Excel, PowerPoint, Outlook, Slack
- **Language**: French (intermediate); Japanese (intermediate)