Yunxi Wang

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EDUCATION

Cornell University, Mechanical Engineering, Minor Robotics   Ithaca, New York
- **GPA:** 3.9 | **Honors:** Hunter R. Rawlings III Cornell Presidential Research Scholars
- **Coursework:** Thermodynamics, Mechanics of Materials, Dynamics, Mechanical Design

EXPERIENCE

Learning Studios Internship | Cornell University   June 2024 - Current
- **Mechatronics Projects: (W/ Associate Director Dr. Andrew Kang)**
  Goal: Model components (optical, encoder, motor) of ASML's EUV lithography machine so students can interact and understand the semiconductor industry.
  - Designed and soldered 10+ motor and torque kits using wood and acrylic for a Cornell instructional lab class to teach Sophomore students gear advantage and motor and torque designs.
  - Collaborating with a group of 3 to create a 3-linked robot arm from scratch that tracks a moving light source and is coded for optimal power efficiency using Arduino, LiDAR sensors, and stepper/servo motors.
  - Created the H-bridge circuitry and designed encoder wheels using CAD programs such as Fusion 360 to demonstrate how rotary encoders are designed and interfaced with electric motors to control positional and speed parameters with Arduino microcontrollers.
  - Created a LabView-driven control of a motorized mirror mount to get to a desired voltage position based on 13 x 13 mm photodiode feedback. Drafted the optimal optical bend geometric set-up in SolidWorks.
- **Wind Turbine Nacelle Redesign:**
  Goal: Implement a nacelle that can measure RPM of wind turbine blades designed by MAE students.
  - Designed and tested a wind turbine nacelle with a group of 3 students for Cornell's instructional fluids and heat transfer lab that houses a larger magnetic particle break, measures RPM with an optical sensor, maximizes aerodynamics, and operates below resonance frequency. Designs were made and assembled in SolidWorks to scale and the final nacelle was printed with onyx carbon fiber.
  - Oversaw project operations with GANTT chart schedules that assisted in the organization of project timeline and meetings with the client to ensure their engineering requirements were met.
  - Generated a bill of materials for budget estimation and drafted and presented slides to the client to discuss next steps for redesigning iterations.
- **Engine CAD: (W/ Professor Brian Kirby)**
  Goal: Create a fully CAD model of the Curtiss OX-5 engine so students can interact with the model in the Glenn Curtiss Museum.
  - Designed in Fusion 360 components of the engine such as main journal bearings, camshaft, and timing gear true to scale.
  - Took apart a Curtiss OX-5 engine and documented the take apart progress for future students to reference.

JS Academy of Math and Programming Student | Jane Street   July – August 2023
- Participated in a partnership in an Electronic Trading Competition and Estimation where I brainstormed fundamental trading algorithms and engaged in collaborative coding.
- Learned combinatorics, number theory, and Python among a cohort of 77 students.
- Communicated mathematics and organized code efficiently and professionally to IMO winners and university professors.

Alumni Relations & Social Chair | YAMATAI   August 2024 – Current
- Sending out monthly emails to alumni updating them on current Yamatai activities.
- Advertising club fundraising on Giving Day through publicizing social media to alumni and campus communities
- Organizing logistics of travel and budgeting club social funds of 15+ social events (camping, ice-skating, movie nights, etc) per year to allow members to enjoy social activities without financial constraints with a focus on strengthening club bonds.

RESEARCH EXPERIENCE

The McMahon Lab: Cornell Applied and Engineering Physic (W/ Post-doc Benjamin K. Malia)   January - June 2024
- Used Python to optimize our Deep Neural Network model that successfully identifies quantum light signals in the presence of noise using overfitting techniques such as PCA, L1/L2 regularization, and dropout layers.
- Built a noise injection module using a classical light source, beamsplitter, and ND filters to develop Light Detection and Ranging (LiDAR) techniques based on a programmable quantum light source.

PROJECTS
- Built a pulsed Nitrogen laser chassis and heating circuits from scratch (Relevant skills: soldering, mechanical, electrical engineering)
- Coded a Wordle bot with Python with an average guess of 3.97 for 2309 guessable words.

SKILLS, LANGUAGES & INTERESTS
Skills: Fusion 360, SolidWorks, Python, LATEX, Microsoft 365, 3D Printing, Circuits
Languages: English, Mandarin
Interests: Taiko Drumming