Dylan Chuang

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Education

University of Florida (UF) - Gainesville, FL *August 2022 - Present*
Bachelor of Science in Mechanical Engineering, Honors Program
Expected Graduation: May 2026, GPA: 3.76/4.0

- **Skills:** Solidworks, Fusion 360, MATLAB, Milling, Lathing, Bandsaw, Arduino, SAP, LabVIEW, Python
- **Relevant Coursework:** Heat Transfer, Vibrations, Control Systems, Fluid Mechanics, Mechanics of Materials, Dynamics, Mechanical Design I, Thermodynamics, Design and Manufacturing Lab, Numerical Methods, Statics, CAD, Circuits

Certifications: Solidworks Associate in Mechanical Design (CSWA)
Awards: University Scholars Program for Undergraduate Research, Presidents Honor Roll, Dean's List, National Merit Scholar

Work Experience

Duke Energy | Distribution Engineering Intern *May 2025 - August 2025*

- Designed underground power distribution systems for new residential developments using Design Lite, ensured accurate CU selection for cost estimation, and performed load calculations in SEDS to assess transformer upgrade requirements.
- Executed transformer and underground primary cable replacements to enhance power quality for customers.
- Investigated "Do Not Operate tags" across 123 feeder circuits to verify associated repair work orders in Maximo; coordinated with the Distribution Control Center to remove tags for underground cables that had been repaired.

Dow Chemical Company | Maintenance Engineering Intern *May 2024 - August 2024*

- Comprehensively re-evaluated 40 non-conformance reports for Process Containment Equipment from 2016-2019
- Located potential field non-conformities using isometric pipe circuit schematics, and performed detailed visual inspections to check for corrosion, lack of thread engagement, damaged insulation and other deficiencies.
- Analyzed Ultrasonic Testing data from Creaform 3D laser scans of a tank, calculated its remaining wall thickness after corrosion and conducted a Fitness-for-Service evaluation per API 653 inspection code.

Involvements/Leadership

Flux Lab | Undergraduate Researcher *January 2025 - Present*

- Conducting research to evaluate the efficiency of thermochemical energy storage cycles using a $MgCl_2$–water reaction.
- Designed a custom experimental apparatus to measure heat released during discharge with a peristaltic pump, heat exchanger, and thermocouple. Applied Reverse Osmosis techniques for salt separation and charging.
- Calculated charging and discharging energies from experimental data and compared them with theoretical values derived from Enthalpy of Mixing and Osmotic Pressure to assess the cycle's feasibility for practical energy storage applications.

Swamp Launch Design Team

- Designed and created detailed drawings of bulkheads, nosecone, airframe, and fins for NASA Student Launch competition.
- Developed decision matrices to select rocket component material, carefully evaluating factors such as tensile strength, cost, machinability, and density. These analyses were incorporated into the Preliminary Design Review (PDR) report.
- Manufactured rocket components using various manufacturing techniques including lathes, mills, bandsaw, and epoxy layups.

Honors Professional Development: Engineering | Teaching Assistant

- Lead weekly small group class sessions for first-year students focused on professional development, designing engaging activities and managing session content based on course assignments to enhance student performance and engagement.
- Mentored students in resumes, cover letters, and interview prep, boosting their confidence for professional opportunities.

Projects

Structural and Material Testing | Data Acquisition/LabVIEW *August 2024 - December 2024*

- Estimated the internal pressure of a Coca-Cola can using strain gauges in a Wheatstone bridge configuration, applying thin-walled pressure vessel theory through a LabVIEW VI to ensure precise measurements.
- Analyzed mechanical properties of Carbon Fiber, Aluminum 6061-T4, and Nylon through tensile testing with a Instron Universal Testing Machine to assess Young's Modulus, Yield Strength, and Ultimate Strength for structural applications.
- Utilized an aluminum bar as an instrumented cantilever beam to accurately measure object weights using strain gauges.

Air Engine | Manufacturing *August 2023 - December 2023*

- Collaborated within a team of three individuals to successfully manufacture four functional air engines.
- Applied precision lathe techniques to craft the flywheel and piston, while creating the base and piston block on the mill.
- Adhered to specific and stringent dimensions and tolerances to ensure the seamless integration of the final assemblies.