

Zachary Kaiser

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Education

Florida Polytechnic University, Lakeland FL

May 2024

Bachelor of Science in Mechanical Engineering

Related Coursework: Strength of Materials, Design for Machine Components, Heat Transfer, Fluid Dynamics.

Concentration: Operations Research

Related Coursework: Operations Research, Supply Chain Management, Reverse Logistics, Planning and Control Systems.

GPA (3.56)

Work Experience

Mechanical Engineer – Nuquatic Advanced Water Technologies

May 2022 – Present

- **Designed full water treatment plant using AutoCAD, SolidWorks, and SolidWorks Simulation.**
 - Developed P&ID, Initial Design, 3D modeling, Safety Analysis, Fabrication Drawings, Construction Documentation.
 - Conducted Finite Element Analysis and obtained factor of Safety of 3 accounting for skid loading on demand.
- **Programmed a Data Acquisition Program using Python and C++ - 250% increase in lab data points per day.**
 - Developed a user interface and data logging program for use in a lab environment interfacing with Arduino to obtain data 5 data points on 15 second intervals with live graph and control charts.
- **Proposed and designed custom Automatic Ph dosing pumps using Arduino IDE - Cost savings of 45%.**
 - Designed and manufactured a custom Ph dosing pump for use within a lab environment capable of adaptive dosing, set rate dosing, and variable dosing.
- **Built a new Routing library and Weldment profiles within SolidWorks – increase in procurement efficiency by 75%.**
 - Generation of standard parts with model numbers for entire PVC and CPVC libraries in ordinance with vendor catalog to cut procurement times down by 75%.

Peer Learning Strategist – Florida Polytechnic University

Aug 2021 – Aug 2023

- **Promoted and taught proper studying habits while providing comprehension of engineering concepts.**
 - Concepts included: Calculus 1, Strength of Materials, Circuits, and Physics 1.

Leadership

Presidential Ambassador – Florida Polytechnic University

May 2022 – Present

- **Lead leadership activities and training to build teamwork and interpersonal skills.**
 - Collaborated to increase student involvement through recruitment by 20%.
 - Assisted over 25 professional tours and events representing the school to potential donors.

Vice President – American Society of Mechanical Engineers

Aug 2020 – Present

- **Managed 5 design projects within the club and stayed under budget by 20% allowing for purchasing of new capital goods.**
 - Student design competition using fully 3D printed components to create an RC car that achieved 15mph across various terrain.

Projects

- **Lake Okeechobee Water Treatment Plant – capable of treating 3000 gallons per minute.**
 - Nuquatic – Mechanical Engineer (Oct 2022 – Nov 2023).
- **Automatic Torsion Tester – Designed, tested, and verified to generate 5Nm of force through a 3D printed gear box.**
 - Florida Polytechnic University – Mechanical Engineer (Aug 2022 – May 2023).
- **Energy Optimization Forecasting Algorithm – forecast and schedule buying and selling of electricity for a microgrid.**
 - Lockheed Martin – Programmer (Oct 2023 – Present).
- **Nasa “Lunabotics” Rover – developed and controlled a mining rover to excavate and collect soil samples remotely.**
 - Florida Polytechnic University – Mechanical Engineer (Aug 2021 – May 2022).

Skills / Certifications

SolidWorks CSWA, SolidWorks Routing, SolidWorks Simulation, Ansys, MATLAB, EES, Python, Microsoft Suit, Arduino IDE, Controls and electronics, PLC, Supply chain management and Procurement