Tyler K. Akana

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Summary

Certified Engineer in Training (**EIT**) and Mechanical Engineering graduate with hands-on experience in mechanical design, thermal-fluid systems, and prototyping. Proficient in CAD modeling, data acquisition, and design for manufacturing. Skilled in solving complex engineering challenges through iterative testing, cross-functional collaboration, and innovative solutions.

Education

Washington State University – Pullman, WA

B.S in Mechanical Engineering, Minor in Mathematics | 12/14/2024

Skills

- **Design and Analysis:** SOLIDWORKS Certified Mechanical Design Associate. Proficient in FEA, flow simulations, thermal analysis, and fluid system design with applications in load bearing components, pneumatics and thermal distribution systems.
- **Prototyping and manufacturing:** Expertise in DFMA principles, 3D printing for rapid prototyping, and refining designs for CNC machining.
- **Project Management:** Skilled in MVP, AGILE, and SCRUM methodologies. Lead teams by assigning roles based on skillsets, ensuring clear communication, and managing project updates, setbacks, and budgets.
- **Data Processing:** Proficient in Excel, Python, MATLAB and Arduino/C++ for system monitoring, data acquisition, real-time analysis, and graphical/statistical representation.

Experience

Undergraduate Research | 01/2024 – 02/2025 **|**Washington State University – Pullman, WA **|** Pictures, graphs, etc. in Portfolio

- *Joint Heat Box Project: HVAC/Thermo-Fluids Design for Heat Stress Analysis of Agricultural Produce***.**
  - Experience working through Ideation, **prototyping**, budgeting, ordering, and **final design/assembly** of a mechanical-fluid system.
  - Utilized **CFD**, and **numerical analysis** to size system parts for a specified volume flow rate, and pressure head.
  - Communicated engineering concepts, results and analysis with a **multidisciplinary** team.
  - Maintained continuous ideation throughout product lifespan and provided **maintenance** and fixes for problems in field deployed systems.
  - Developed a **data acquisition** system to collect temperature data from several test units with the ability to transmit temperatures to an opensource API.
  - **Trained** new members of team in CFD, and existing fluids, and control systems to ensure continuity in project.

Design Project with PACCAR-Kenworth | 08/2024 – 12/2024 **|** Videos, graphs, and results listed in Portfolio

- *Data Acquisition Project: Pneumatic Force Measurement System for Testing of Semi-Truck Hoods.*
  - **Lead** both aspects of project and designed pneumatics and controls systems.
  - Selected proper **valves**, and components to pair with **air cylinders** under MVP constraints.
  - Created **Arduino** based data acquisition system for **less than 1/10th the cost** of commercially available systems.
  - Designed connecting components on air cylinders to withstand up to **600lbf** through **SOLIDWORKS simulation**.
  - Produced Testing procedure, and **Schematics** for user documentation, and presentation of project.

References available upon request