

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, MATLAB. 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, HOQ, and SCRUM methodologies. Lead teams by assigning roles based on skillsets, ensuring clear communication, and managing project updates, setbacks, and budgets.
- **Data Analysis:** Proficient in Excel, Python, and Arduino/C++ for system monitoring, data acquisition, and real-time analysis.

Experience

Undergraduate Research | 02/24 – 12/24 | Washington State University – Pullman, WA | Pictures, graphs, and more 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 piping 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 system.
 - Developed a **data acquisition** system to collect temperature data from several test units with the ability to transmit temperatures to an opensource API.

Senior 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.