Tyler K. Akana

253-228-6953 | Tyler.Akana@Outlook.com | **Portfolio** | **LinkedIn**

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, AutoCAD, MATLAB. Finite element analysis (FEA), flow simulations. Thermal analysis and fluid system design.
- **Prototyping and Testing:** iterative prototyping and troubleshooting techniques, fabrication using CNC and manual machining.
- **Project Management:** Project lifecycle management using MVP, HOQ, and SCRUM methodologies. Team leadership and clear communication, and presentation of technical results.
- **Manufacturing:** Design for Manufacturing and Assembly (DFMA) principals. Experience with 3D printing and machining for rapid prototyping.
- **Data Analysis:** Excel and Python for showcasing system performance metrics. Data acquisition and real time system monitoring.

Experience

Undergraduate Research | 02/24 – 12/24 **|**Washington State University – Pullman, WA **|** More Info in Portfolio

- *Joint Heat Box Project: HVAC/Themo-Fluids Design for Heat Stress Analysis of Agricultural Produce***.**
  - Experience working through Ideation, **prototyping**, budgeting, ordering, and **final design/assembly** of a novel heat distribution system.
  - Utilized CAD external and internal **fluid simulations**, and **numerical analysis** to ideate, and specify components in design.
  - 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 accessible from anywhere with a password and Wi-Fi connection.

Senior Design Project with PACCAR-Kenworth | 08/2024 – 12/2024 **|** More Info in Portfolio

- *Data Acquisition Project: Pneumatic Force Measurement System for Testing of Semi-Truck Hoods.*
  - Took **leadership** on both aspects of project and spearheaded design for pneumatics and controls systems.
  - Selected proper **valves**, and components to pair with **air cylinders** under MVP, and compressor 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.