

Tyler K. Akana

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Summary

Mechanical Engineering student with hands on experience in engineering design including HVAC, and thermo-fluids. Developed and optimized a heat box for replication and study of climate change induced heat waves on potato growth, showing strong skills in design, prototyping, and communication.

Education

Washington State university – Pullman, WA

B.S in Mechanical Engineering, Minor in Mathematics | Expected graduation- **12/24**

- *Relevant Coursework*
 - Structural Engineering of Commercial Aircraft (Taught by Boeing)
 - Combustion Engines
 - Design for Manufacture and Modern Manufacturing Strategies
 - Fluid Mechanics
 - Heat Transfer

Skills

- **Mechanical Design:** SOLIDWORKS Certified Mechanical Design Associate, experience with design under load and F.O.S. Standards, as well as analysis involving SOLIDWORKS flow simulations.
- **Prototyping & Testing:** From ideation to final design, including fabrication, troubleshooting and iterative improvements.
- **Manufacturing:** Design using DFMA principles and software, basic operation of manual and CNC mills and lathes.
- **Project Management:** Team-based project experience and leadership, including MVP, HOQ, and SCRUM methodologies.
- **Fluid System Design:** Designed a pneumatic system for use in measurement of force at truck hood mounts in conjunction with Kenworth PACCAR.
- **Engineering Analysis:** Received EIT (Engineer In Training) certification, utilized Excel and Python for synthesis of sets of test data into presentable graphics, and performance metrics of mechanical and fluid systems.

Experience

Undergraduate Research | 02/24 – Present | Washington State University – Pullman, WA

- *Joint Heat Box Project: HVAC/Thermo-Fluids Design for Heat Stress Analysis of Potatoes.*
 - 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.