

# Liam Haynie

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## EDUCATION

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<b>Bachelor of Science in Mechanical Engineering, Emphasis in Robotics &amp; Control</b> University of Utah	May 2027 GPA: 3.44
• <b>Dean's List: Spring 2025 – Fall 2025</b>	
<b>Associate of Science in Biology</b> Utah Valley University	2019 - 2021 GPA: 3.37

## TECHNICAL SKILLS

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|-----------------------------------|--|--------------------------------|
| • SolidWorks Certified, CSWA 2025 | • Digital multimeter (DMM)               | • 3D printing (FDM)            |
| • MATLAB                          | • Soldering (through hole & SMD)         | • Statistical data analysis    |
| • Arduino (C/C++)                 | • Hands-on prototyping experience        | • Experimental data collection |
| • LTSpice                         | • Slicing software (Cura & Bambu Studio) | • Adobe Premiere               |
| • Oscilloscope operation          |  | • Microsoft Office             |
|                                   |  | • Documentation management     |

## PROJECTS

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|--|-----------------------|
| <b>Reagent Storage Insert</b>  | Aug. 2024 – Present   |
| • Identified risk of reagent spillage and cross contamination in existing storage system and designed a custom 3D printed insert to organize validated reagent supplies  |                       |
| • Eliminated contamination related losses and enhanced operational reliability, saving ARUP Laboratories thousands of dollars annually   |                       |
| <b>Rat Operated Car   Personal Project (inspired by <a href="#">Crawford et al., 2020</a>)</b>   | Jun. 2025 – Dec. 2025 |
| • Designed and built an original rat operated vehicle for emotional enrichment using laser cut and 3D printed components, featuring a rat centric ergonomic carriage and a three-pad copper touch interface with Arduino control for rat directed steering |                       |
| • Programmed Arduino firmware with touchpad debouncing, a state tracking feedback system, and ramped PWM acceleration/braking to smooth motion and reduce jitter   |                       |
| • Observed that rats who chose to drive and control the vehicle's movement appeared more playful with cage mates (anecdotal), aligning with published findings on stress buffering effects of agency   |                       |

## EXPERIENCE

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|---|-----------------------|
| <b>Solution Specialist (Infectious Disease Antigen Testing Lab), ARUP Laboratories</b>  | Oct. 2020 – Present   |
| • Collaborated with LabTech and ARUP R&D teams on the development of a <i>Streptococcus pneumoniae</i> ELISA by performing assay testing and supporting experimental validation   |                       |
| • Supported research and development of a rapid <i>Escherichia coli</i> O157:H7 card assay by sourcing, de-identifying, and preparing previously tested clinical samples for Meridian Bioscience's Curian device                  |                       |
| • Led onboarding and training of new laboratory staff while coordinating with lab supervisors and lead technologists to plan testing workflows and laboratory projects; periodically presented updates and findings to leadership |                       |
| <b>Undergraduate Research Assistant (UROP), Additive Manufacturing Lab, University of Utah</b>  | Jan. 2022 – Aug. 2022 |
| • Conducted sponsored undergraduate research in additive manufacturing focused on the development of bioabsorbable sensors for periodontal aligners and artificial joint applications   |                       |
| • Supported experimental testing by capturing, organizing, and analyzing data from laboratory experiments to evaluate sensor performance  |                       |
| • Presented experimental methods and findings through written and oral research updates, contributing to project documentation and technical communication  |                       |