

Sophia Hekman

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EDUCATION

California Baptist University

Riverside, CA

Bachelor of Science, Mechanical Engineering

ABET Accredited | Expected April 2027

GPA: 3.97

ACTIVITIES

Formula SAE EV - CBU Motorsports

Riverside, CA

Powertrain Intern → Junior Lead → Senior Lead

Sep. 2023 - Present

- Designed and optimized CNC-manufactured components using SolidWorks FEA, achieving a 30% weight reduction and 25% decrease in machining time while maintaining structural integrity
- Led a sub-team of 4 engineers, delegating design, analysis, and manufacturing tasks to meet deadlines
- Utilized OptimumLap and MATLAB to optimize gear ratios and balance downforce/drag, improving lap time predictions by 4 sec/lap

PROJECTS

California Baptist University

Riverside, CA

LEGO Robot Competition

Jan. 2024 - Apr. 2024

- Collaborated with a 12-member team to design and build a multi-robot system using LEGO Mindstorms EV3 Kits for a competitive object-sorting challenge
- Designed and developed the transportation unit, responsible for transporting beads across the field, optimized for cost, weight, speed, and reliability
- Modeled robot components in Fusion 360 and prepared part files in AutoCAD for fabrication through the university's rapid prototyping lab

FSAE Water Hydration Pouch

Sep. 2023 - Dec. 2025

- Partnered with the Formula SAE IC team to design a driver hydration system, eliminating driver dehydration during endurance events
- Designed the pouch in SolidWorks, optimizing weight, durability, and reducing cockpit space
- Prototyped and tested the system, enabling drivers to hydrate efficiently without affecting lap times and supporting improved performance

WORK EXPERIENCE

California Baptist University

Riverside, CA

Machine Shop Technician

Feb. 2024 - Present

- Machined 30+ precision components using CNC mills, routers, manual mills, lathes, welding equipment, and plasma cutters for academic and competition projects, including Formula SAE and senior capstone projects
- Utilized precision measurement tools to maintain ± 0.001 in. tolerances
- Trained and assisted peers in safe machining practices

Del Taco

Eastvale, CA

Fast Food Team Member

Jun. 2022 - May 2023

- Collaborated with a team of 6–8 to reduce average wait times by 10%, enhancing customer satisfaction
- Served 100+ customers per shift with consistent order accuracy, balancing speed and quality in a fast-paced environment

SKILLS

Software: SolidWorks, Fusion 360, AutoCAD, Excel, MATLAB

Technical: CNC mill/router, Manual lathe/mill, 3D printing, Soldering, MIG welding