Christopher Gorzynski

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Education

California Polytechnic State University, San Luis Obispo Sep 2021 – Dec 2025
Bachelor of Science in Biomedical Engineering *San Luis Obispo, CA*

- **GPA: 3.53/4.0**
- **Relevant Coursework:** Solid Modeling & Detailed Design, Mechanical Systems Design, Design for Strength and Stiffness, Principles of Biomaterials Design, Mechanics of Materials I & II, Fluid Mechanics, Thermodynamics, Bioelectronics, Composite Materials Analysis and Design, Technical Writing for Engineers

Experience

Alphatec Spine Inc. Jun 2024 – Sep 2024
R&D Engineering Intern *Carlsbad, CA*

- Redesigned the operating table mount for the **SafeOp 3 neuromonitoring unit** in SolidWorks, developing **two distinct design iterations** while collaborating with the marketing team to align design features with user needs
- Applied **SolidWorks FEA** to support design decisions during clamp geometry iteration, contributing to a **reduction in both clamp weight** and **neuromonitoring device profile** on the operating table
- Used **Bambu Labs** and **Stratasys** printers for **rapid prototyping**, followed by **use-case testing** to evaluate clamp performance in simulated **operating room** conditions
- Developed **detailed part and assembly drawings** for manufacturing and presented the final design to Alphatec leadership, highlighting the **iterative design process,** key improvements, and **user-focused features** added to address project goals

CytoCT Jan 2025 – Jun 2025
Design Engineering Student Co-Op *San Luis Obispo, CA*

- Directed a **4-person** team in designing a **white blood cell workflow cartridge** for a cellular imaging device intended to diagnose diseases such as Malaria, Sepsis, and Tuberculosis in **resource-limited countries**
- Designed a **single-use cartridge** in SolidWorks, focusing on **disposability**, **ease of assembly**, and integration into the existing CytoCT imaging workflow
- Assembled and tested multiple 3D-printed prototypes, performing **leak-proofing** and **mixing homogeneity** tests to demonstrate consistent operational performance of the cartridge design
- Documented cartridge design decisions, test methods, and integration considerations to support future iteration and handoff

Projects

Adaptive Exercise Equipment for Wheelchair Users Jan 2024 – Jun 2024

- Led a **6-person** team in developing custom exercise equipment attachments for a young girl with **cerebral palsy,** enabling safer, **independent movement** and providing a **low-cost** alternative to traditional physical therapy solutions
- Designed a **spring-loaded** footplate attachment in **SolidWorks**, using **FEA** and **fatigue analysis** to ensure long-term durability of components, resulting in a mechanically reliable design suited for daily use
- Researched materials using the **MatWeb database** to identify reliable, cost-effective options that balanced functionality and budget constraints, leading to a **40%** reduction in overall project cost

Gearbox Assembly – Lawrence Livermore National Laboratory (LLNL) Sponsored Project Apr 2025 – Jun 2025

- Designed and manufactured a manually operated powder transfer system for LLNL's additive manufacturing process, integrating a **custom worm gear drive,** metal housing, and purchased parts to meet dimensional and budget constraints
- Performed **AGMA gear, shaft, and C10 bearing** analysis using custom **MATLAB** design tools to guide component selection and manufacturing, ensuring reliable operation under varying loads
- Achieved **310 lb-in torque** capacity, handling **200%** more than the highest load tested by other teams and delivering smooth and reliable 180-degree rotation without back driving

Wing Spar Design Project Apr 2024 – Jun 2024

- Collaborated in a team to design an airplane wing model using SolidWorks FEA, focusing on the design and analysis of wing spars with specified constraints to develop a high-performance wing design
- Researched real-world wing-spar materials and selected the most cost-effective option that met strength, weight, and budget requirements

Technical Skills

CAD and Simulation: SolidWorks, Autodesk Inventor, OpenSim, FEA
Programming and Data Analysis: MATLAB, Excel, ImageJ, Minitab
Testing and Lab Equipment: Universal Testing Machine, 3D Printer, Laser Cutter, Drill Press, Lathe, Welding
Clubs & Interests: Weight Lifting, Cal Poly Engineering Mentors, Cal Poly EMPOWER, Sales Engineering Club, Golf