

Logan Schmid

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Education

California Polytechnic State University - San Luis Obispo

Sep. 2021 - Present

M.S., B.S., Biomedical Engineering | Minor: Mathematics | GPA: 3.98

Work Experience

Health Technologies R&D Engineering Co-Op | Apple

Jan. 2025 - Aug. 2025

- Built a Python image analysis library with 11 modules, handling preprocessing of RAW & Apple-internal image formats in addition to leveraging color science & OpenCV to evaluate the colorimetric performance of multiple image processing pipelines in development
- Abstracted complex image analysis workflows into two simple CLI tools for end-user accessibility
- Refactored codebase to reduce analysis time by ~98% during multi-region analysis per image
- Assembled portable fixture and wrote controls library utilizing OOP & coroutines for a linear actuator to enable various potential human studies in a new lab, saving the team \$100k+ in equipment cost
- Integrated linear actuator and robotic arm programs with scripted image collection and streamlined data offloading, sorting, parsing, & reconfiguring to reduce human study visit time by ~33%
- Lead repo collaboration using git branches, standardized module documentation, and readable code
- Managed human study logistics, visit execution, and data labeling to provide an ML classification model test set, along with assisting in FA to pinpoint specific data needs for model aggressors

Mechanical R&D Engineering Co-Op | Abbott

Jul. 2024 - Dec. 2024

- Product & process development for a novel pacemaker, involving header, mold, fixture, and seal design
- Supported execution and documentation of DV, TMV, IQ, OQ, DOE, etc. for ICD manufacturing processes
- Performed 3D X-ray CT scans on devices to investigate device failures and validate relevant dimensions

Project Lead, Corona-Enabled Electrostatic Printing Sensors | Dr. Long Wang

Jul. 2023 - Jul. 2024

- Directed project scope & workflow and trained new team members on experimental equipment
- Processed images of microscopically-captured piezoresistive sensor microstructures in MATLAB
- Investigated sensor piezoresistivity via FEA on deformed carbon nanotube microstructures
- Used MATLAB algorithms to statistically reconstruct microstructures for a more extensive data set

Instructional Student Assistant | Cal Poly, Mech. Engineering Department

Sep. 2023 - Jun. 2024

- Graded for Introduction to Detailed Design with Solid Modeling, Dynamics, & Intermediate Dynamics
 - Provided over 100 students feedback on proper dimensioning and GD&T practices in technical drawings
 - Consulted on technical and assembly drawings for 15 mechanical engineering senior projects
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Project Experience

Lower-Limb Exoskeleton Assist Project | Cal Poly EMPOWER

Sep. 2021 - Present

Mechanical Systems Project Manager | Jun. 2023 - Jun. 2024

- Organized team structure and propelled progress on redesigned exoskeleton prototype
- Designed, analyzed, and machined revisions of cycloidal and planetary gearboxes for exoskeleton joints
- Collaborated with controls teams to integrate software and electronics with physical parts

Clinical-Kinesiology Team Lead | Sep. 2022 - May 2023

- Structured and facilitated team research into physiological risks for a paraplegic user
- Analyzed literature on human gait to define torque and rpm specs to drive joint design
- Worked with other teams to further implement user safety into exoskeleton design

Undergrad Researcher | Human Motion Biomechanics Lab, Cal Poly

Oct. 2022 - Jun.

2024

- Continued development of a discrete, wearable device to monitor spine posture and strain
 - Screen-printed piezoresistive, ethyl cellulose carbon nanotube ink in strain rosettes
 - Collected, post-processed, and analyzed data pertaining to human gait and balance
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Technical Skills

CS & Data Analysis - Python, C/C++, MATLAB, Java, Bash, Git, OpenCV, SK-Learn, Minitab, Excel
CAD & FEA - SolidWorks, Creo, Abaqus, Fusion360, COMSOL Multiphysics, AutoCAD, Surface Modeling
Prototyping - Mill, Lathe, Laser Cutter, FDM & SLA 3D Printing, TIG/MIG Welder, GD&T

Relevant Coursework

Biomedical Signal Transduction & Data Acquisition, Machine Learning, Data Structures & Algorithms, Biomedical Modeling and Simulation, Applied FEA, Anatomy & Physiology, Biomaterials Design, Intro to C

Programming, Mechanical Systems Design, Intermediate Dynamics, Fluid Mechanics & Transport,
Thermodynamics, Biomechanics, Mechanics of Materials, Linear Analysis, Casting