# 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 a 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 necessary 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

## Project Experience

**Lower-Limb Exoskeleton Assist Project | Cal Poly EMPOWER** **Sep. 2021 - Present**

*Mechanical Systems Project Manager* | *June 2023 - Present*

- 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* | *September 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 - Present**

- 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

## Technical Skills

*Programming & Data Analysis* - Python, OpenCV, scikit-learn, Unix Shell, MATLAB, C, Java, 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