

# Alexander Hahnsuk Pak

🌐 US Citizen 📍 Los Angeles, California 📧 [in/alexander-pak-ap59](mailto:in/alexander-pak-ap59) 🌐 [alexanderpak.com](http://alexanderpak.com)

## EDUCATION

**BS Mechanical Engineering '23 3.873 GPA** University of California, Los Angeles (UCLA) • Los Angeles, CA  
**MS Mechanical Engineering '26 (In Progress)** University of California, Los Angeles (UCLA) • Los Angeles, CA

## SKILLS

**Software:** SolidWorks; Onshape; Excel; HTML/CSS; Python; C++; MATLAB; Gcode  
**Technical:** Machining (CNC, Mill, Lathe); Power Tools (Saws, Drills); 3D Printing; Laser Cutting; Vinyl Cutting; Embroidery  
**Languages:** English (Native), Korean (Fluent), Spanish (Proficient)

## RELATED WORK/RESEARCH EXPERIENCE

### Motiv Space Systems

**CCRS Lead Harnessing Engineer / Mechanical Design Engineer** April 2023 - February 2024  
• Design flight flex cable, round wire, and harnessing for NASA's Mars CCRS Robotic Gantry  
• Iterate on flight harness design to remove 30% of mass from the system and pass load/deflection requirements  
• Tabulate and analyze harnessing component mass and load capacities  
• Took failing Tip Deflections and Close Clearances for harnessing from x3 negative to x1.5 positive margins  
• Qualify a Lead Screw for flight in accordance to JPL requirements via \$100,000 test procedure

### Biomechatronics Lab

**Undergraduate Researcher** August 2022 - June 2023  
• Adapting Meta's camera-based tactile sensor (DIGIT) to interface with the lab's 5 different Robotic Arm manipulators  
• Improving DIGIT through Gel reconstruction, housing CAD adjustments, and creating new modular system

### Hard Media, Inc. / DSPORT

**CNC Manufacturing Intern** June 2022 - September 2022  
• Program/execute Text/Conversational GCode using 4-axis CNC Machine to increase car engine and manifold efficiency  
• Probe features to machine car engines, guide blocks, and other parts with a tolerance of 0.0005"

### UCLA Samueli Engineering Makerspace

**Engineering Staff Personnel** September 2021 - June 2023  
• Proficiency to use and repair all of the makerspace's tools: power tools, 3D printers, laser cutters, and more  
• Oversee and teach students using the equipment available in the space  
• Thousands of hours in 3D printer usage and maintenance

### JLaserVideo (Video Link: <https://youtu.be/21ucmScfQT4>)

April 2022 - May 2022  
• Recreated the Batmobile, a functioning automobile with contraptions!  
• Designed, modeled, and manufactured lego transport system

## ENGINEERING TECHNICAL PROJECTS

### Robotic Arm

November 2022 - December 2022

- CAD and manufacturing of a 5 DoF Arm with a spherical joint
- Forward and Inverse Kinematic analysis of the arm to transport a cup without spilling its contents

### X1 Robotics (ASME at UCLA)

**BruinBot Mechanical Designer and Manufacturer** September 2021 - June 2022  
• Adapt to a pre-modeled CAD and optimize it for manufacturing  
• Manufacture using traditional machining, 3D printing, laser cutting, soldering

## ORGANIZATIONAL INVOLVEMENT AND LEADERSHIP

### American Society of Mechanical Engineers (ASME) at UCLA

**Social Director (2020 - 2022) → President (2022 - 2023)** March 2020 - May 2023

### Japanese Animation Club at UCLA

**Secretary (2020 - 2021) → Internal Vice President (2021 - 2023)** March 2020 - May 2023

### Fresh Productions Art at UCLA

**Committee Member (2020 - 2021) → President (2021 - 2023)** March 2020 - May 2023

### UCLA Technical Management Program "TMP"

**Instructor Aide and Participant** March 2023