

Alexander Hahnsuk Pak

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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 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