Shoh Nishino

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EDUCATION

University of California, Los Angeles (UCLA)

M.S., Mechanical Engineering — Expected June 2027

- Relevant planned coursework: Energy and Computational Methods in Structural Mechanics, Kinematics of Robotic Systems, Mechanics of Flexible Structures and Soft Robots

B.S., Mechanical Engineering — Conferred July 2026

- GPA: 3.738/4.000

WORK EXPERIENCE

Professor Anushri Dixit's PRACTICE Laboratory, UCLA — July 2024 – Present

Undergraduate/Graduate Researcher

- Researching methods to improve robotic navigation reliability by quantifying uncertainty in large language model decision-making and mitigating risk
- Deployed a vision language model-based navigation policy calibrated using conformal prediction on a four-wheeled robot, achieving a ∼25% relative improvement in success rate over baselines (CPNav, paper under review)
- Developing an anomaly detector leveraging deep learning foundation models, cosine similarity, and conformal prediction to identify out-of-distribution environments, achieving 99.5% accuracy across randomly sampled test environments
- Awarded competitive research funding from Sandia National Laboratories to support graduate work on conformal prediction-based safety guarantees for robotic motion planning (starting Fall 2026)

BASF Environmental Catalyst and Metal Solutions, Seneca, SC — June 2025 – August 2025

Continuous Improvement Mechanical Engineering Intern

- Developed a process to mitigate precious metal loss out of the refinery through waste stream analysis and improved filtration systems
- Designed an AutoCAD-based storeroom layout to improve space efficiency, inventory accessibility, and overall organization of more than 6,500 distinct items
- Reduced ORP probe waste and saved $50,000+ annually by reestablishing a calibration and recycling system, implementing defect testing, and standardizing procedures through operator training
- Worked jointly with operations, maintenance, and administration to improve inefficient processes across multiple departments including the storeroom, utilities and wastewater, and the refinery

John Wooden Center, UCLA — August 2024 – Present

Supervisor (September 2025 – Present), *Fitwell Consultant* (August 2024 – September 2025)

- Leading a team of 6 Fitwell Consultants, coordinating shift responsibilities, training and onboarding new staff, and ensuring smooth operations for a facility serving 100-400 patrons at any given time
- Enhancing patron safety and satisfaction by monitoring all recreation spaces, managing incidents and policy violations, and upholding facility protocols

ENGINEERING PROJECTS

Autonomous Rover and Manipulator for Operational Rescue (A.R.M.O.R.) Capstone Project — January 2026 – June 2026

Manipulation Design and Controls Lead

- Designed and fabricated a 3-DOF manipulator and parallel-jaw gripper in SolidWorks—including a planetary gear yaw drive, twin-arm linkage, and geared four-bar gripper—using 3D-printed and laser-cut acrylic components
- Optimized gripper four-bar linkage geometry and manipulator link lengths in MATLAB to satisfy geometric constraints
- Derived closed-form inverse kinematics and a collision-aware obstacle relocation algorithm in Python (ROS2 on Raspberry Pi), integrating LiDAR-based detection to autonomously acquire and relocate obstacles
- Validated the manipulator through mechanical testing—exceeding reach and height requirements by 25%+—while confirming full range of motion, grip strength, and structural safety margins (torque SF 2.5 via static/dynamic analysis)

Engineers Without Borders, UCLA — September 2022 – January 2024

Facilities Lead

- Led efforts to provide the Bukonko, Iganga community in Uganda with safe, potable drinking water
- Modeled infrastructure solutions, evaluated potential sites, and helped implement design plans

TECHNICAL SKILLS AND CERTIFICATIONS

Programming: Proficiency in Python, MATLAB
Languages: Native Fluency in Japanese and English
Other: Proficiency in SolidWorks, AutoCAD, 3D Printing, Basic Manual and CNC Machining Skills (Milling, Turning, Drilling)
Certifications: FE Exam Passed (7/6/26); E.I.T. Application Pending