

# Karina Puente

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## EDUCATION

### Oregon State University

*Ph.D. Robotics*

Corvallis, OR

Sep. 2021 – Present

### Texas Tech University

*Bachelor of Science in Mechanical Engineering*

Lubbock, TX

Aug. 2017 – May 2021

## EXPERIENCE

### Graduate Research Assistant

*Intelligent Machines and Materials Lab*

Sep. 2022 – Present

Corvallis, OR 97330

- Researching soft underwater end-effectors.
- Creating and designing visualizer for actuation and sensor control in MoveIt and KivyMD

### Graduate Research Assistant

*Robotic Decision Making Lab*

July. 2021 – Sep. 2022

Corvallis, OR 97330

- Researched design and grasp planning for a variable stiffness hand.
- Created an optimization algorithm to make variable stiffness hand reconfigurable.

### REU: Robots in the Real World

*Social Haptics, Assistive Robotics, and Embodiment*

May – Aug. 2020

Corvallis, OR 97330

- Created a human study to test a haptic wearable device that will be used by the blind and visually impaired to identify objects in their environment.
- Investigated different veering techniques to improve the range of the ultrasonic sensor.
- Coded logarithmic graphs with Arduino IDE software for ultrasonic sensor, so it can detect at different lengths.

### Undergraduate Research Assistant

*Bio-Inspired Mechanics and Systems Lab*

Aug. 2019 – May. 2021

Lubbock, TX 79409

- Designed Hexapod robot with spider locomotion.
- Coded and implemented heuristic genetic algorithms into a Hexapod Robot using Arduino IDE software.
- Completed oral presentations at the UCLA, UMBC, and TTU McNair Research Symposiums.

### Undergraduate Research Assistant

*Biomedical Engineering Lab*

Apr. 2018 – May. 2019

Lubbock, TX 79409

- Investigated the microfluidic cardiac flow in aortic heart valves.
- Worked with lay-up and lamination techniques with fiberglass, kevlar, and carbon fiber to create chassis.
- Created a 2-chamber mold out of PDMS to test the shear strength in heart valves.

## ACADEMIC PROJECTS

### Fetch Robot Scavenger Hunt Project | Python, ROS, MoveIt

Sep. 2021 – Dec. 2021

- Develop Python scripts that control the mobile and manipulation capabilities of a Fetch Robot for object detection.

### Optimal Path Planning in an Underactuated System | Python, ROS, MoveIt

May 2022 – June 2022

- Generated an optimal path for discrete step-wise control of joint stiffnesses and tendon tension.
- Deployed A\* search algorithm to find the optimal path in cartesian distance space.

## TECHNICAL SKILLS

**Coding Languages and Software:** Python, MATLAB, Robot Operating System, SolidWorks, and Adobe Photoshop

**Operating Systems:** Microsoft Windows and Linux (Ubuntu)

**Tools:** Soldering iron, 3D printers, digital multimeter, servo motors, and dynamixels

**Languages:** English and intermediate/advanced Spanish

## LEADERSHIP/INVOLVEMENT

### Robotics Graduate Student Association

*Public Relations Officer*

Dec. 2021 – Sep. 2022

Corvallis, OR 97330

- Advertise /promote events, send emails out to the student body, communicate with other student organizations, manage RGSA social media accounts and website

### First-Generation Transition and Mentoring Programs

*Mentor*

Aug. 2020 – May 2021

Lubbock, TX 79409

- Support undergraduate students that identify as first-generation in college as they pursue their undergraduate degree.