Jennifer Yang

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Education

Carnegie Mellon University — **Pittsburgh, PA**
Master of Science in Robotics — **Aug. 2024**
Bachelor of Science in Mechanical Engineering — **May 2023**

Experience

Research Assistant — **May 2023 – Aug. 2024**
Carnegie Mellon University Zoom Lab — **Pittsburgh, PA**

- Built an affordable, easy-to-manufacture, omnidirectional quadruped robot with 3-DOF linear Delta actuators.
- Developed simulations in PyBullet to test potential walking gaits, enabling rapid qualitative gait assessments.
- Applied trajectory optimization to generate 4 different gaits with 4+ variations, and 1 rotation gait.
- Characterized robot performance through experiments, using computer vision to track and analyze position errors.

Mechanical Engineering Intern — **May 2022 – May 2023**
Gecko Robotics — **Pittsburgh, PA**

- Designed, prototyped, and assembled a dedicated testing unit for the TOKA 4 Robot Center Body, streamlining build and verification processes by reducing bottlenecks and saving 200+ hours throughout the build cycle.
- Performed thermal testing to ensure system reliability and prevent overheating during extended operation.

Resident Assistant — **Aug. 2021 – May 2023**
Carnegie Mellon University — **Pittsburgh, PA**

- Fostered community engagement among 40+ residents by organizing events, leading House Council initiatives, and mediating conflicts to maintain a positive living environment.

Research Experiences for Undergraduates Student Intern — **Jun. 2021 – Aug. 2021**
Oregon State University Laboratory for Robotics and Applied Mechanics — **Corvallis, OR**

- Refined the sidewinding gait of a soft, pneumatic robot snake by assessing 2 control schemes and 8 flow rates.
- Enhanced understanding of its capabilities by evaluating performance across 3 terrains with 3 robot materials.

Leadership

Society of Women Engineers | Carnegie Mellon University — **Aug. 2019 – Sep. 2022**

- Coordinated the 2020 – 2022 STEM Career Fairs by managing catering for 200+ people, recruiting companies to attend, and collaborating with CMU to promote the event.

Projects

Haptic Mouse | Carnegie Mellon University — **Mar. 2024 – May 2024**

- Worked with a team of 5 to implement haptic feedback on a computer mouse augmented with a rotary Delta actuator, improving learning experiences for visually impaired users through user studies.

Optimized Racecar Controller | Carnegie Mellon University — **Oct. 2023 – Dec. 2023**

- Partnered with 2 peers to develop a racecar controller that utilized quadratic programming, providing a solution that is optimized across all constraints and outperforming the current controller for Carnegie Mellon Racing.

BeanBag Pick and Place | Carnegie Mellon University — **Oct. 2023 – Dec. 2023**

- Worked with 4 peers to utilize behavior cloning to develop a pick and place network for deformable objects.

PosChair: A Posture Enhancing Chair | Carnegie Mellon University — **Aug. 2022 – Dec. 2022**

- Collaborated within a 5-person team to design and prototype an electro-mechanical device integrated into a chair, featuring a sensor system for posture detection, and haptic and visual feedback for posture correction.

Bellcranks and Dampers System Lead | Carnegie Mellon Racing — **Aug. 2021 – May 2022**

- Engineered and manufactured the bellcranks and dampers system using kinematic simulations and stress analysis, ensuring it met specified design goals through kinematic simulations and stress analysis.

Skills

Programming: Python, C/C++, MATLAB, Julia, Arduino, PyBullet
Software: CAD (SolidWorks), CAM (HSMWorks, MasterCAM), FEA (SolidWorks FEA, ANSYS)
Machines: CNC Mill, Vertical Mill, Lathe, 3D Printer, Laser Cutter
Languages: French (Conversant), Mandarin (Conversant)