Sidney Nimako

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EDUCATION

Carnegie Mellon University

Master of Science in Robotics — May 2025
Bachelor of Science in Mechanical Engineering minor in Robotics — May 2023

EXPERIENCE

Graduate Researcher | CMU Zoom Lab & SHRED Lab | Fall 2023 - Ongoing | Pittsburgh, PA

- Designed and manufactured centimeter scale robots for search and rescue
- Mentoring undergraduate students on engineering and research skills

Hardware Engineering Intern | DoorDash Labs | Summers 2022, 2023 | San Francisco, CA

- (2022) Designed and constructed the electrical system for a 4 quadrant dynamometer
- (2023) Developed GUI for interfacing with a Dynamometer for non-expert users
- (2023) Developed controllers for velocity and torque tracking to simulate test and road conditions

Undergraduate TA | Carnegie Mellon University | Spring 2023, Spring 2024 | Pittsburgh, PA

- (2024) Lead a hands on research group developing simulations for Lunar locomotion
- (2023) Delivered course content on Dynamics Systems and Controls to 90+ students
- (2023) Conducted office hours to provide content and programming assistance

Undergraduate Researcher | CMU Robomechanics Lab | Fall & Spring 2023 | Pittsburgh, PA

- Created functions characterising the inertial and geometric impacts of active spines on quadrupedal robots
- Created simulation environments for accessing robot performance

Robotics Intern | Facebook AI Research & CMU Robotics Institute | Summer 2021 | Pittsburgh, PA (Remote)

- Redesigned a multi-digit robotic hand to decrease envelope by 20%, increase range of motion and improve assembly
- Created documentation on the assembly process and use for the existing hand design
- Ran consistency and robustness tests on soft, capacitive sensors

PROJECTS Additional Projects available at http://snibo.me

Toss Juggling In-Sim (and on Hardware) | Mechanics of Manipulation | Fall 20223

- Trained a DDPG policy to complete the juggling task in a custom environment
- Applied the co-design framework to outline a hardware system to embody the policy

Mapping and Payload Robot (MAPR) | Robotics Capstone | Spring 2023

- Built an autonomous indoor delivery robot using ROS1 and off the shelf components
- Led development of mobility subsystem in software and hardware

Phlebot | Mechatronic Design | Spring 2023

- Designed and prototyped an autonomous venipuncture robot powered by a Jetson Nano and 3D printer driver
- Led electromechanical system integration and co-led mechanism design

Jenga Tower Robot | Robot Kinematics and Dynamics | Fall 2021

- Implemented control software for a 4-dof robotic arm to build a jenga tower in record time

Macropad Keyboard | Independent | Summer 2021

- Created hardware (mechanical and PCB) and firmware for a 7-key mechanical keyboard with a built-in rotary encoder

SKILLS

Digital: Python, C++, MatLab, Javascript, LaTeX, C, KiCAD, Linux, Solidworks, Blender, Unity, OnShape
Physical: 3D Printing, Mill, Lathe, Soldering, Laser Cutting, Circuit Design, PCB(A)

ACTIVITIES & HONORS

Dean's List | Spring 2022, Fall 2022, Spring 2023

Outstanding Citizenship Award (2019) *from The National Society of the Sons of The American Revolution*

University Honors (2023) *from Carnegie Mellon University*

Departmental Honors (2023) *from Department of Mechanical Engineering*

COURSEWORK

Mechanics of Manipulation | *Introduction to Machine Learning (PhD)* | *Robot Kinematics and Dynamics* | *Imperative Programming* | *Human-Robot Interaction* | *Robotic Systems Engineering* *Mechatronic Design* | *Modern Control Theory*