

# Sidney Nimako

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## EDUCATION

Carnegie Mellon University  
Master of Science in Robotics May 2025  
Bachelor of Science in Mechanical Engineering May 2023  
*minor in Robotics*

## EXPERIENCE

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

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

DoorDash Labs San Francisco, CA  
Hardware Engineering Intern Summer 2022, Summer 2023

- (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

Carnegie Mellon University Spring 2023, Spring 2024  
Undergraduate TA 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

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

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

Facebook AI Research Pittsburgh, PA (Remote)  
Robotics Intern Summer 2021

- 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

## COURSEWORK

Advanced Mechatronic Design | Algorithms for Interactive Robotics  
Robot Localization and Mapping | Mechanics of Manipulation  
Introduction to Machine Learning | Robot Kinematics and Dynamics  
Imperative Programming | Human-Robot Interaction  
Robotic Systems Engineering | Mechatronic Design  
Modern Control Theory

## PUBLICATIONS

Boateng, Sidney Nimako, et al. "Heterogenous Collaboration: A new approach for search and rescue operations." *2024 IEEE International Symposium on Safety Security Rescue Robotics (SSRR)*. IEEE, 2024.

## PROJECTS

*Additional Projects available at <http://snibo.me>*

Toss Juggling In-Sim (and on Hardware)  
Mechanics of Manipulation | Fall 2023

- 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

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, ROS, Rust  
Physical: 3D Printing, Mill, Lathe, Soldering, Laser Cutting, Circuit Design, PCB(A)

## LANGUAGES

French – Limited Working Proficiency  
German – Elementary Working Proficiency

## 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