Jared Berry

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EDUCATION

Northwestern University | *McCormick School of Engineering* — Evanston, IL
Bachelor of Science in Mechanical Engineering | Robotics Concentration — September 2022 - June 2026
Master of Science in Mechanical Engineering | Robotics and Control — May 2025 - June 2026

- GPA: **3.735/4.00**
- Relevant Coursework: Data Structures and Algorithms, Differential Equations, Circuit Design, Mechanics, Quadrotor Design, Mechatronics/Microcontrollers, CAD, Dynamic Systems, Robotic Manipulation, Machine Learning, Control Systems

EXPERIENCE

Shirley Ryan AbilityLab — Chicago, IL
Clinical ML Research Intern — June 2024 – Present

- Collected and **processed raw sensor data** from 9 DOF IMU sensors using Python.
- Extracted and selected features for use in an ML model using multiple **feature selection** algorithms.
- Created **Python ML model framework**, and predicted upper-limb motor function for recovering stroke patients (R2 = 0.93).
- **Optimized model hyperparameters** using nested cross-validation and an Optuna hyperparameter search algorithm.
- **Nominated for best paper** at ICORR 2025 and presented findings to robotics professionals in a research symposium.

Mobile Mark, Inc — Itasca, IL
Engineering Intern — June 2023 – September 2023
Data Collection, Analysis, and Design

- Collected data, analyzed trends with graphs in **Excel**, and presented them to engineers in comprehensive reports.
- Fabricated various antenna elements using a circuit CNC machine.
- Used **SolidWorks** to design and analyze the mechanical structure of various components.

Active Antennas for Industrial Mining and Military Applications

- Programmed final performance parameters on microcontrollers after product burn-in.
- Assisted in general assembly and soldering of TMA line.

PROJECTS AND RESEARCH

Mobile Manipulation + Pick-and-Place — *Robotic Manipulation, Northwestern University*
Capstone for ME449 Robotic Manipulation — September 2024 - December 2024

- Generated a **dynamically calculated** reference trajectory in Python using the desired length and joint speed parameters.
- Created a **feedforward + PI feedback controller**, enabling task completion from any initial configuration with arbitrary error.
- Calculated **forward and inverse kinematics** for the mobile base and manipulator of a KUKA youBot.
- Prevented self-collisions and singularities with a custom function to improve motion quality and robot safety.

Rogers Research Group — *Northwestern University*
Undergraduate Research Assistant — September 2023 – June 2024

- Performed **micro-soldering** for wearable and implantable ECG, and also assisted in signal tuning and encapsulation.
- Collected and analyzed EEG/EOG data, and processed signals using Python in preparation for machine learning.
- Investigated how to create a **ROS/Python** control framework for a robotic arm with EOG signal processing.
- Developed a **ROS2 position control framework** to manipulate a 7-DOF robotic arm.

Modified Video Game Controller — *Design, Thinking, and Communication, Northwestern University*
Worked in a team of 4, partnered with Shirley Ryan AbilityLab. — March 2023 – June 2023

- Determined a way for an individual with an above-elbow right arm amputation to play video games on their Xbox Series S.
- Interacted with the patient to create a design tailored to their specific impairments.
- Designed a customized Xbox joystick **controlled by the residual limb**, paired with a controller for left hand and foot buttons.

LEADERSHIP

Strive: Northwestern's Community for Black Men — Evanston, IL
Social Media Chair — May 2023 – Present

- Led team in charge of club rebrand, overhauled all club media presence with new logo and brand guide.
- Managed club social media accounts and designed flyers/announcements for events.
- Organized the capturing, collection, and editing of photos and videos of events for club social media.

ADDITIONAL SKILLS & INTERESTS

Skills: ML Architecture, Linux, ROS/ROS2, Excel, SolidWorks, NX, Blender, CNC, Soldering, Graphic Design
Languages: Python (Numpy, Pandas, Sklearn), C/C++/C#, x86-64 Assembly, Matlab, Java, Arduino, Racket
Volunteering: Black Men Lead, Willow Creek Community Church, Luv Michael Charity
Certifications: Illinois State Seal of Biliteracy in Spanish
Interests: Piano, Viola, Guitar, Bass, Music Production, 3D Art, Photography, Basketball and Soccer