Brandon E Martinez

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Education

University of Notre Dame — Notre Dame, IN

Bachelor of Science in Computer Science, Engineering Corporate Practice Minor — *May 2027*

- Relevant Coursework: Data Structures, Systems Programming, Linear Algebra and Differential Equations, Intro to Artificial Intelligence, Digital Integrated Circuits, Microeconomics

Experience

Undergraduate Software Lead — June 2024 – Present

Domer Rover — *Notre Dame, IN*

- Engineered a custom **C++** ros2_control interface bridging motor drivers with Nav2, enabling seamless transitions between autonomous planning and manual teleop
- Developed **ROS 2** packages for IMU and GNSS sensors to feed an **Extended Kalman Filter (EKF)**, providing precise state estimation for simulation and navigation
- Prototyped a telemetry interface using **Arduino** and Websockets to validate differential drive kinematics, accelerating mechanical R&D testing
- Led the deployment of **YOLOv8** recognition on NVIDIA Jetson hardware, optimizing search-and-rescue mission performance by **15%**

Business Solutions Extern — June 2025

Coaction Global — *Morristown, NJ*

- Observed cross-functional collaboration between IT, actuarial, and software engineering teams; identified key skills and relevant technologies

Incoming Software Engineering Intern — June 2026

Bank of America — *New York, NY*

Projects

Sentiment Analysis | *Pandas, NumPy, Jupyter, Matplotlib, Scikit-learn* — Sep. 2024 – Dec. 2024

- Developed scalable sentiment analysis models on **17,000+** real-world product reviews using VADER and RoBERTa classifiers in **Jupyter** Notebooks
- Applied data pre-processing (pandas, numpy), TF-IDF tokenization, and log transformations to optimize Naive-bayes and Logistic Regression implementation, improving processing time by **5**%
- Achieved up to **85%** predictive accuracy, delivering a reliable model for categorizing customer feedback to identify key areas for product improvement

Robotic Football | *Python, sh, JSON, Git* — Aug. 2023 – Mar. 2024

- Developed Python automation scripts on Raspberry Pi and Linux, implementing Arduino serial communication to log battery temperature telemetry for system diagnostics

C-99 Linux Dev. Tools | *C, Make, Shell Scripting, Unix/Linux* — Feb. 2025 – May 2025

- Developed a suite of Linux utilities and system tools in **C**, re-implementing essential **Unix** commands like curl, find, grep to strengthen expertise in systems programming and operating system concepts
- Utilized Makefiles for build automation and Shell scripting to streamline development workflows
- Designed and implemented programs featuring advanced file I/O operations, string processing, robust memory management (heap, stack, dynamic allocation), signal handling, and network socket communication

React Portfolio | *JavaScript, HTML, CSS, Node.js, React.js, GSAP, SVG* — Aug. 2024 – Present

- Developed responsive personal website with **React.js**, CSS, and **JavaScript**; enhanced with GSAP and ScrollMagic interactive animations for smooth user interaction

Technical Skills

Languages: C/C++, Python, JavaScript, HTML, CSS, MATLAB
Frameworks/Libraries: React, Node.js, OpenCV, PyTorch, Scikit-learn
Developer Tools: Bourne Shell (sh), Git, GitHub, JupyterLab, ROS-2, Vim, Unix/Linux, Docker