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*

- Led the development and deployment of **C++** image recognition systems using **YOLOv8** on NVIDIA Jetson Nano hardware for autonomous missions
- Implemented GNSS/IMU sensor publishing and subscriber nodes in **ROS 2** (C++, Python, serial, rclpy), enabling real-time data streams for path planning and autonomous navigation
- Designed de-serialization methods of NMEA protocol GPS sentences for motor board instructions needed for antenna rotation computations and functionality
- Deployed ArUco marker detection modules in **Python** with **OpenCV** 4.11+ for pose estimation
- Contributed to a **15%** improvement in Search and Rescue evaluation performance

Business Solutions Extern June 2025

Coaction Global *Morristown, NJ*

- Gained exposure to enterprise-scale insurance technologies, including Azure DevOps workflows, Microsoft stack front-end tools, and business solutions software portals
- Observed cross-functional collaboration between IT, actuarial, and software engineering teams; identified key skills and relevant technologies

Projects

Sentimental 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, WiringPi, Serial, JSON, Git* Aug. 2023 – Mar. 2024

- Led development of 3 automation scripts for robotics club projects utilizing Python, Raspberry Pi, and version control systems, gaining hands-on experience with Linux environments and basic automation concepts

C-99 Linux Dev. Tools | C, Make, Shell Scripting, Unix/Linux, Docker 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, RESTful APIs, OpenCV, PyTorch, Scikit-learn
Developer Tools: Bourne Shell (sh), Git, Github, JupyterLab, ROS-2, Vim, Unix/Linux, Docker