

DAVIN LANDRY

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EDUCATION

NORTHWESTERN UNIVERSITY

Master of Science in Robotics

Evanston, IL

December 2022

PURDUE UNIVERSITY

Bachelor of Science in Mechanical Engineering

West Lafayette, IN

May 2019

Certificate in Entrepreneurship and Innovation

May 2019

PROFESSIONAL WORK EXPERIENCE

Northwestern University

Evanston, IL

Research Engineer: Center for Robotics and Biosystems (CRB)

Feb 2023- Present

- As Lead Mechanical and Electrical Engineer, Spearheaded the design and enhancement of the Omnids, collaborative mobile robots, preparing for demonstration at the prestigious MARS 2024 Conference.
- Instructor of the Robotic Design Studio Engineering Capstone course, where students are challenged to build high-fidelity robotic systems such as an anthropomorphic SEA robot Arm and Finger/Thumb gripper with haptic enabling exoskeleton controller
- Manager of CRB Makerspace, providing consultation for PhD and Masters students to build and actualize their robotic research projects, including but not limited to mechanical design and manufacturing

The INSTITUTE For HUMAN MACHINE COGNITION (IHMC)

Pensacola, FL

Robotics Engineer: Lead of QUIX ExoHaptics Project

June - Sept 2022

- Developed and implemented haptic feedback devices for the QUIX lower-body rehabilitative exoskeleton
- Coded communication system for the haptic device to relay walking gait states in real time to enable leg awareness for exosuit pilots
- Integrated and validated ExoHaptics with force plate testing equipment to interpret Center of Pressure feedback for balance perception and stability awareness for lower body exoskeletons

Robotics Engineer: NADIA Humanoid Robot Project

Feb 2020 - Aug 2021

- Conducted literature review on humanoid robotic feet to design and prototype several robotic feet, incorporating bio-inspired toes to better utilise “roll over shape” and add the 4th linkage of a bipedal system
- Defined requirements and tested 6-axis Force/Torque sensor for center of pressure sensing in the robot foot
- Designed collapsing mold for layering carbon fiber upon for consistent inner surface topography of structural robot thigh shell, making carbon fiber thigh shells easier and more reliable to manufacture

SELECTED PROJECTS

Omnid MoCoBots: MARS 2024 (Electrical Engineering, Circuit Design, Project Management)

2024

- Managed a team of 13 students, driving the project to success through technical and leadership skills.
- Engineered and led the implementation of critical features, including battery monitoring, wireless emergency-stop systems, and advanced joint limiters to enhance safety and functionality.
- Designed, prototyped, and deployed multiple printed circuit boards (PCBs), including the main control board integrating emergency-stop logic, battery voltage monitoring, and inter-board communication.

Ball Balancing Robot: “Balanciaga” (Python, ROS, Computer Vision, Embedded Systems, Controls)

2021

- Led a team of robotic engineers to develop a ROS package that controls a whiteboard attached to the end effector of a 7 DOF Franka-Emika Panda Arm to make a ball navigate mazes drawn on the whiteboard
- Implemented the computer vision pipeline for real-time ball detection and maze detection using OpenCV for HSV color detection and contour tracking

RELEVANT SKILLS

Programming: Python, C++, C (Embedded), Java, HTML&CSS, MATLAB

Software Development: ROS, Git, Gazebo, OpenCV, MoveIt, Unit Testing

Design Software: OnShape, KiCAD, SolidWorks, Unity, Creo, CATIA V5