Maxwell Louis Saltrelli

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SUMMARY

Computer Engineering graduate with significant robotics and prototyping experience seeking to use his design and engineering expertise in a full-time role. Hands-on experience in implementing control system design, rapid prototyping, and low-level programming in the themed entertainment industry. Innovative mindset, strong interpersonal, leadership, and communication skills, diverse experiences across computer, electrical, mechanical, and systems engineering, as well as architecture. Extensive experience utilizing simulations, modeling, game engines, and hardware/software integration for various robotics projects.

EDUCATION

Washington University in St. Louis | Cumulative GPA 3.85 — St. Louis, MO
Bachelor of Science in Computer Engineering | Minors in Robotics, Architecture — May 2025

- **Relevant Coursework:** Robotic Systems Design, Control Systems, Computer Architecture, Electrical and Electronic Circuits, Intro to Computer Engineering (TA), Systems Software, Design Process, CAD, Dynamics, Vibrations, Engineering Technical Writing
- **Awards & Honors:** Dean's List, RIT Innovation Award, Big Break Foundation Ignite Scholar, DEBUT Design Challenge Honoree
- **Extracurricular Activities:** K.A.R.L. Improv Comedy (Captain), Robotics Club (Hybrid Body Lead), Game and Theory

ENGINEERING EXPERIENCE

Ride Control Intern | *Walt Disney World* | Orlando, FL — June 2025-Present

- Developed and implemented 500+ rungs of Allen Bradley ControlLogix PLC code to control the wayside system of an upcoming attraction while taking into account existing ride hardware, safety protocols, and overall attraction and program efficiency
- Designed and programmed an HMI for the monitoring and maintenance of the attraction's wayside system
- Assisted in on-site quality analysis, wiring, and hardware testing for a ride control system PLC and ride cabinet replacement

Advanced Technology Initiatives (ATI)/R&D Engineering Intern | *Universal Creative* | Orlando, FL — May 2024-Aug 2024

- Designed and implemented framework of multiple 12+ state FSMs to handle the communication, timing, decision-making, and motor movements of a robotic animated figure in existing and future projects
- Performed 10+ tabletop and mounted tests on a sensor to determine its potential uses to ensure guest containment on ride vehicles
- Developed system to handle the sensor/motor input and communication protocol between several units for an interactive experience
- Wired, soldered, 3D modeled, programmed, and assembled a mechanism to test the strength of various cables over hundreds of thousands of cycles, as well as a power supply bank with a focus on safety and ease of use for an animated figure

Catoptric Surface Project Undergraduate Researcher | *Washington University in St. Louis* | St. Louis, MO — May 2023-Dec 2023

- Explored the UE5 game engine for the purpose of enhancing user interface design and developing a simulation of a catoptric system
- Designed an artist-centric UI that can translate a digital drawing to motor movement and a lighting design in a physical space
- Refined mirror and motor implementation and wiring in physical installation of 650 mirrors

President | *WashU Robotics Club* | St. Louis, MO | www.washurobotics.com — Jan 2022-Dec 2023

- Launched the 1st robotics club at WashU and recruited 270+ members while overseeing the development of 10+ robotics projects
- Implemented engineering expertise as a technical advisor to all active endeavors including our custom quadcopter, motion capture wearable glove, and MATE ROV underwater robot projects to provide solutions to issues beyond the scope of project leads
- Increased efficiency of executive board functions by implementing communication skills to resolve interpersonal conflicts
- Presented to faculty, alumni, and outside companies like Microsoft, Google AI, and more to secure annual project funding

Mechanical/Electrical Engineering Intern | *Portalp Inc.* | Pittsburgh, PA — June 2022-August 2022

- Utilized Solidworks to construct an advanced prototype model for a newly designed automatic, three-panel telescopic door
- Improved the company CAD usage from simple models for each part to 70+ part assemblies of active automatic doors to identify and correct slight defects in measurements and emergency latch systems by studying physical doors being built in the warehouse
- Mitigated wiring issues encountered in automatic door control mechanisms while following governing electrical codes

PROJECTS

Hybrid Body Project | *WashU Robotics Club/CSE Capstone Project* | St. Louis, MO — May 2024-May 2025

- Developed a wearable device to assist the visually impaired by providing haptic feedback to alert them of their surroundings
- Led project team to manage TOF sensors, haptic motors, and machine learning algorithms for assistive technology device

Pupper Quadruped Robot Independent Study | *Stanford University/Hands-On Robotics* | St. Louis, MO — December 2021-May 2022

- Constructed and programmed a walking robotic quadruped while completing Stanford University Pupper curriculum
- Utilized sensors to develop PID loop and calculated inverse kinematics necessary to provide Pupper with a fluid gait
- Developed reinforcement learning code based on simulated motion capture data for continued gait development

SKILLS

Software: JAVA, C++, C, Python, VHDL, RISC-V ISA, MATLAB, Assembly, Arduino C, Ladder Logic, Allen Bradley PLC
Additional Skills: Arduino, Raspberry Pi, Unreal Engine 5, Unity, Microsoft Office Suite, Solidworks, AutoCAD, Blender