

DYLLAN RYDER HOFFLICH

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EDUCATION

Master of Engineering, Cornell University, Ithaca, NY — Class of 2026, Electrical & Computer Engineering

Bachelor of Science, Cornell University, Ithaca, NY — Class of 2026, Electrical & Computer Engineering, Robotics Minor

GPA: 4.116/4.0

Relevant Coursework: Computer Architecture, Advanced Microcontrollers, Microelectronics, Embedded Systems, Signal & System Analysis, Computer Vision, Robotic Fundamentals, Autonomous Mobile Robots, Data Structures & Algorithms, VLSI, Data Science

EXPERIENCE

Corning Incorporated – Machine Vision Measurements Intern

May 2025 – August 2025

- Created an automatic measurement system to reduce inspection time from weeks to ~3 minutes, leading to a 800x increase in speed, using image processing with Halcon, and linear stage controls and a GUI via WPF framework using C#.
- Facilitated a measurement system analysis to characterize the system's precision and usability by other operators.

TigerGraph – Machine Learning Intern

June 2022 – August 2022, May 2024 – August 2024

- Worked with team of 8 full-time engineers to design and add asynchronous functionality to our graph database's python interface to greatly speed up data ingestion and graph traversal (2024).
- Spearheaded implementation and testing of our database's python interface for new API endpoints (2024).
- Led implementation of TensorFlow (TF) support for graph ML platform across all available graph databases (2022).
- Applied critical analysis to existing TF graph ML approaches, aiding the company's final decision in TF execution (2022).

Improving Data Efficiency for Robots on Construction Site – Research Assistant

January 2024 – May 2024

- Research project sought to use redundancy in robot construction site scans to significantly reduce data size using a SLAM model to reconstruct the scene with a fraction of the stored images, achieving a 72.5% data reduction rate.
- Led development of robotic quadruped simulations and creating pipeline for 3D reconstruction data ingestion using Nvidia Omniverse and ROS Noetic.

MD.AI – Data Science Intern

June 2023 – August 2023

- Directed and primarily implemented DICOM SR & SEG export and input functionality for radiology annotations and reports for ease of creating medical machine learning models.
- Co-led the auto-generation of medical infographics and short videos using large language models.
- Red-teamed our chat platform to prevent sensitive information leaks and unsupervised medical advice.

Weill Cornell Medicine – Machine Learning Research Intern

June 2020 – June 2022

- Wrote and conducted independent research on creating a classifier to classify frontal chest x-rays into AP and PA view, testing if it led to higher computer-aided diagnosis accuracy rates. (2021-2022)
- Wrote and conducted independent research on utilizing the USE-QA (Universal Sentence Encoder-QA) model to answer COVID-19 questions with higher accuracy than previous models (74.4% vs. 49.5%). (2020-2021)

ENGINEERING PROJECTS

Cornell CUP Robotics ECE Subteam Lead

October 2022 – August 2025

- Led team of 9 students to design and implement a 6 degree of freedom replica of NASA's Astrobee robot, with the purpose of flying in space to develop and promote an educational robot kit.
- Astrobee replica uses PID with two fans with twelve vents to control the direction and speed of the robot, with the controls and emotions handed by a Raspberry Pi Pico and Zero W.
- Worked on power distribution PCB and RPi shield to control motors for a bipedal robot with VR integration.
- Created a system to control the mini-robot via physical blocks through RFID tags, utilizing SPI communication between sensors and a React webapp to process the scanned tags.

Robot Simulation of Navigating to Waypoints and Mapping Environment

- Created a localization algorithm for a simulated robot with LIDAR, using a combination of a particle filter and recognizing locations of known beacons in MATLAB.
- Created a mapping and locomotion algorithm using a Baye's filter and RRT to navigate the robot to set waypoints.

Multi-Core Pipelined Processor (System Verilog)

- Designed and implemented a four-cored, 5-stage pipelined processor for a reduced version of the RISC-V ISA, including a four banked cache to improve efficiency.

Robotic Mobile Trashcan

- Built a robotic system that uses a YOLO-based computer vision model to autonomously catch thrown objects.
- Programmed real-time trajectory prediction and motor control logic on a Raspberry Pi to analyze a video feed and navigate to an object's predicted landing spot.

Automatic Etch-A-Sketch

- Creating an Etch-A-Sketch that can transform images into continuous line drawings and draws them automatically.
- Modelled and printed a mount for the Etch-A-Sketch, motors, and gears, controlled the motors through Arduino, and used weighted Vernoi stippling and python to transform images into points and then a continuous line.

SKILLS

Technical Tools & Skills: RTL design, Verification, Quartus, FPGA, PCB design, LTSpice, Machine Vision, Machining, Linux

Programming Languages/Libraries: Python, Verilog, C, C++, C#, ROS, MATLAB, PyTorch, TensorFlow, JS, Halcon, HTML, CSS