

Electrical/Computer Engineer with interests in control systems and signal processing. Currently working on my master's thesis in an accelerated program at Virginia Tech.

Education

Master of Science in Computer Engineering (Accelerated Master's Program) Virginia Tech – Focusing on Control Systems and Signal Processing <i>Advisers: Dr.Thinh Doan (UT Austin) and Dr.Michael Hsiao (Virginia Tech)</i>	May 2025 Blacksburg, Virginia
Bachelor of Science in Electrical & Computer Engineering (double major) Virginia Tech – Control Systems and Machine Learning	May 2024 Blacksburg, Virginia





Technical Experience

Virginia Tech · Robotics Research Graduate Researcher <ul style="list-style-type: none">Developing a 6-axis robotic manipulator and a ROS2-based simulation environment using Gazebo and Gymnasium for testing custom reinforcement learning algorithms.Undergraduate and graduate research applying "neuro-symbolic" reinforcement learning algorithms with The Control, Optimization, and Online Learning for Autonomy Lab (C.O.O.L.) at UT Austin.	Aug 2023 – Present Blacksburg, Virginia
Graduate Teaching Assistant <ul style="list-style-type: none">Taught fundamental concepts in linear systems theory and digital signal processing, including Laplace Transforms, Z-Transforms, system stability, and FIR & IIR filter design.Assisted with hands-on projects to illustrate and integrate analog and digital filter design and application on breadboards and TI MSP432 development boards.	Aug 2024 – Present Blacksburg, Virginia
Jacobs Space Exploration Group · Mars Ascent Vehicle (MAV) Thrust Vector Control Intern <ul style="list-style-type: none">Developed thrust vector control testing hardware and software for NASA's Active Inertial Load Simulator at the Marshall Space Flight Center.Created and ran tests to develop a mathematical model of an electro-mechanical actuator – used Python, MATLAB, and LabView.Derived control algorithms for a load-simulating actuator, in Simulink, to simulate external loads placed on the Mars Ascent Vehicle's thrust vector control actuators during flight.Designed and integrated a 3rd order IIR filter to remove high frequency noise from a load cell and linear variable differential transformer (LVDT).	May 2024 – Aug 2024 Huntsville, Alabama (Merrit Island, Florida)
Grenoble Electrical Engineering Laboratory · Microgrid Inverters Control Systems Research Intern <ul style="list-style-type: none">Researched inverter control systems – designed to be robust to islanding events and avoid future infrastructure problems on the French power grid.Simulated neutral point capacitive and balancing topologies using 4-leg inverters in Simulink. Tested PI control, PR control, Clarke and Park Transforms with HIL simulations.	Jun 2023 – Aug 2023 Grenoble, France
Naval Surface Warfare Center (Carderock Division) · Hospital Sea Trains Concept Research Intern <ul style="list-style-type: none">Developed concept hospital sea-train designs at the Center for Innovation in Ship Design and estimated fuel consumption and electrical power loads of the concept sea-trains.	Jun 2022 – Aug 2022 West Bethesda, Maryland

Skills

Software: C/C++, Python, MATLAB, Simulink, GNU/Linux, Git, ROS2, Gazebo, Make, CMake, Labview, Qt, PyTorch, OpenCV, \LaTeX , Verilog, FreeRTOS, Autodesk Inventor (Certified), SolidWorks, Rhino
Hardware: PCB Design and Assembly, Breadboarding, Computer Architecture, Oscilloscope, Multimeter, 3D-Printing

Projects

6-Axis Robotic Arm  <ul style="list-style-type: none">3D printed robot arm, built using stepper motors and pulleys.ROS2 Jazzy control and Gazebo Harmonic simulation.	Aug 2024 – Present
Closed Loop Stepper Motor  <ul style="list-style-type: none">Backdrivable stepper motor driver using closed loop control and a magnetic encoder for feedback.4-layer PCB mounts to the back of the motor with CAN and power connections.	Dec 2023 – Present
Design Teams Solar Car & Human Powered Submarine  <ul style="list-style-type: none">Overall E/E architecture of the Solar Car.Single board computer and LCD to display relevant data to the submarine pilot.	Oct 2020 – Mar 2023
Optical Charcter Recognition Capstone  <ul style="list-style-type: none">IOS application capable of detecting coins of interest/value.Trained OCR and ResNet-50 models on a dataset of real and augmented coin images.	Aug 2023 – May 2024