

ADRIAN RUVALCABA

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OBJECTIVE | Seeking a position as a Machine Learning Engineer to apply and expand the technical, problem solving, and team-based skills I have acquired while delivering cutting-edge solutions to solve critical challenges.

EDUCATION | **M.ENG. COMPUTER ENGINEERING – MACHINE LEARNING** Fall 2023
VIRGINIA TECH, ARLINGTON, VA
B.S. COMPUTER ENGINEERING – MACHINE LEARNING Fall 2021
VIRGINIA TECH, BLACKSBURG, VA
ASSOCIATE OF ARTS AND SCIENCES IN ENGINEERING Spring 2019
NEW RIVER COMMUNITY COLLEGE, CHRISTIANSBURG, VA
CUM LAUDE HONORS

EXPERIENCE | **SOFTWARE ENGINEER – ADVANCED APPLICATIONS BAE SYSTEMS** Spring 2022 – Present

- Utilize Python to develop automated test plans for verifying proper operation of various Hybrid Electric Vehicle components.
- Analyze CAN traffic for valid signal transmission between devices in embedded systems.
- Perform reviews on existing test plans to verify compliance with component requirements

WEB DEVELOPER ASSISTANT INTERNSHIP VIRGINIA TECH Spring 2019 – Spring 2022

- Managed the webpage for the Institute for Creativity, Arts, And Technology
- Utilized open-sourced software and API to meet the needs of end user
- Gained hands-on experience with creating JavaScript functions for website applications

RESEARCH | **ORBITAL LAUNCH VEHICLE TEAM – RF ENGINEER VIRGINIA TECH** Fall 2019 – Fall 2021

- Assisted in the creation and implementation of a custom long-range communication system
- Analyzed long range transmissions to verify they adhere to regulations
- Developed test plans for avionics systems to ensure minimum risk of failure
- Created and carried out launch day procedures to ensure component functionality
- Processed telemetry data using MATLAB and Excel to improve future launches
- Successfully achieved a Level 1 Tripoli Certification
- Gained experience with sensors and systems for rockets intended to go to space
- Studied hardware description languages such as VHDL and Verilog to configure avionics systems

COURSEWORK | **MACHINE LEARNING & ARTIFICIAL INTELLIGENCE**

- Explored supervised and unsupervised learning algorithms including classification, logistic regression, support vector machines, clustering, decision trees, and genetic algorithms
- Implemented Deep Q-Learning algorithm for use in OpenAI Gym's Python CartPole environment
- Applied heuristic techniques to determine optimal search solutions
- Analyzed operation and limitations of artificial neural network systems

COMPUTER VISION & DIGITAL IMAGE PROCESSING

- Implemented image enhancement techniques such as noise removal, deblurring, and color correction
- Applied edge detection, image segmentation, and image compression algorithms
- Derived theory behind epipolar geometry, feature extraction, and image recognition
- Utilized MATLAB to create neural network for gesture recognition from images of hand position

ROBOTIC SYSTEMS & EMBEDDED SYSTEMS DESIGN

- Computed forward and inverse kinematics of serial-link robotic manipulators
- Computed dynamics and path planning of simple robotic manipulators
- Designed and implemented multi-threaded software operating in real-time on embedded computer systems in the C language
- Utilized MQTT to communicate between several embedded components over the internet

SKILLS & ABILITIES | Language Skills

Native Spanish Speaker Native English Speaker Experienced in French

Software

Python	C++	MATLAB	JavaScript	Arduino
GitHub	PyTorch	OpenAI Gym	SKLearn	Microsoft Office