

ADRIAN RUVALCABA

MACHINE LEARNING ENGINEER

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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.

EXPERIENCE

January 2022 – February 2023

Software Engineer – Advanced Applications [BAE Systems]

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

October 2019 – December 2021

RF Engineer – Orbital Launch Vehicle Team [Virginia Tech]

- Analyzed long range transmissions to verify regulation compliance.
- Developed test plans for avionics systems to ensure minimum risk of failure.
- Created and conducted launch day procedures.
- Processed telemetry data using MATLAB and Excel to improve future launches.

PROJECTS

Retinal OCT Analysis

Implemented a Multi-Scale Convolutional Neural Network for automated AMD Classification using Retinal OCT images. Achieved **94.59%** accuracy on the Noor Eye Hospital dataset.

Financial Sentiment Analysis

A transformer-based approach for sentiment analysis on financial text. Predicted three categorical outputs: Positive, Neutral, and Negative. Achieved **72.51%** accuracy on FinancialPhrasebank-V1 with minimal pretraining.

RNN Image Captioning

Generates image captions using a Recurrent Neural Network. Image encoding was done through an InceptionV3 network and captions were generated with an LSTM-based RNN. Used the Flick-8K Dataset.

Visual Identification of State Space

Extracting state-space of Street Fighter 2 from purely visual inputs. Using a mix of Template Matching and Kernel Coefficient Filter tracking, the locations of the players, current moves, health, and remaining round time were inferred for use in Reinforcement Learning applications.

EDUCATION

Master of Engineering

Computer Engineering
(Machine Learning)
Virginia Tech
January 2022 – July 2023
GPA: 3.62

Bachelor of Science

Computer Engineering
(Machine Learning)
Virginia Tech
August 2019 – December 2021
GPA: 3.0

RELEVANT COURSEWORK

- DEEP LEARNING
- ADV MACHINE LEARNING
- ADV COMPUTER VISION
- REMOTE SENSING
- PRINCIPLES OF ROBOTICS
- LARGE SOFTWARE DESIGN
- STATISTICS IN RESEARCH
- MICROCONTROLLERS
- ELECTRONICS & CIRCUITS

KEY SKILLS

Python, C++, MATLAB, PyTorch, SKLearn, Tensorflow, Computer Vision, NLP, Reinforcement Learning, Robotics, Rocketry, Leadership, Prototyping, Embedded Systems, Arduino.

LANGUAGES

- NATIVE ENGLISH
- NATIVE SPANISH
- LIMITED PORTUGUESE