

Vicente Farias

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Education

Columbia University, School of Engineering and Applied Sciences

New York, NY

Bachelor of Science in Computer Science and Electrical Engineering

May 2023

- Relevant Coursework: Data Structures, Discrete Math, Signals and Systems, Circuit Analysis Lab, Digital Systems Lab, Electronic Circuits Lab, Probability for Engineers, Computational Linear Algebra, Advanced Programming in C, Artificial Intelligence, Intro to Databases, Technical Interview Prep in C++, Machine Learning, Design in C++, Computer Vision, Natural Language Processing

Professional Experience

Intel Corp.

Software Engineer Intern

June 2022 - September 2022

- Configured a KVM virtual machine for development in an Ubuntu Linux environment.
- Installed Intel OpenVino Deep Learning Toolkit & C++ Driver Behavior Analytics to extract real-time distracted driver telemetry using Linux machine's camera (head orientation, yawn, and blink counts).
- Simulated generation of vehicle telemetry, using Python scripting, by deploying AWS Connected Mobility Fleet-Manager application and uploading telemetry from Linux machine to AWS IoT Core.
- Modified vehicle telemetry payload to include distracted driver telemetry & updated AWS Lambda, S3 backend and frontend (Python & Javascript) files to validate uploaded modified vehicle payload.
- Verified and documented system integration by extracting real-time data from local Linux machine camera, uploading data to IoT Core, & observing telemetry in fleet manager nodeJS application.

Technical Experience

Image Captioning with Conditioned LSTM Generator | Python, Keras/Tensorflow Fall 2022

- Preprocessed image captions for LSTM training by creating matrix image representations using pre-trained Inception V3 image encoder.
- Developed generator function for LSTM training instances. Trained LSTM generator on caption data
- Implemented decoder function for LSTM language generator. Enhanced LSTM caption generator with image inputs in addition to caption data. Implemented greedy & beam search for improved captions.

Image and Video Processing Library | C++ Fall 2022

- Designed image and video processing C++20 module by expanding, composing, and simplifying upon OpenCV's mat and vid classes.
- Implemented a CLI as a sample use-case for applying and working with image and video processing functions, such as object detection and classification using yolov5 ONNX deep learning model.

Technical Interview Prep | C++ Spring 2022

- 15-week participation in online rated live coding competitions from websites such as LeetCode, atCoder, CodeChef, Topcoder, CodeForces
- Reviewed basic data structure and algorithm implementations using C++ STL.

Columbia Course Rating System | Python, PostgreSQL Fall 2021

- Designed SQL relational schema for student-course interaction, including follows, ratings, and posts.
- Implemented schema on PostgreSQL database server, ensuring seamless data storage and retrieval.
- Deployed and set up Python (Flask) backend server on Google Cloud virtual machine, handling front-end REST responses and PostgreSQL queries directly (without an Object Relational Mapper).

Skills

Programming: Python, C/C++, Java, Javascript/Typescript, SQL, VHDL

Libraries: C++ STL, Tensorflow, PyTorch, Scikit-learn, Pandas, Numpy, OpenCV, Flask, SQLAlchemy, Django

Languages: English (Fluent), Spanish (Native)

Frameworks & Tools: nodeJS, ReactJS, nextJS, Git, Unix/Linux, GCP, AWS, Virtual Machines (kvm)