Bryan Linares

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EDUCATION

California State University, Long Beach — Long Beach, CA
Master's of Science in Computer Science **GPA:3.5** — *Aug. 2022 – Dec. 2025 (Expected)*

Long Beach, CA
Bachelor's of Science in Computer Engineering, Minor in Computer Science — *Jan. 2017 – Dec. 2019*

PROJECTS

3D Rendering Engine | *C++, OpenGL, GLSL, GPU* — Github/3dland
- Developing a 3D rendering engine using C++ and OpenGL and SFML user input, to load and render 3D models of 1000s of polygons with textures, lighting, and animation
- Implemented Phong lighting, texture mapping, and normal mapping, for material effects using GLSL vertex and fragment shaders on the GPU
- Optimized performance maintaining above 60fps, to 1000s renders per second, on an HD resolution viewport.

Bugfixhound WebApp | *Python, FastAPI, Bootstrap, SQL, Docker, Angular* — Github/bugfixhound
- Collaborated in a 2 person team, developed a full-stack bug tracking web application, ported a Flask backend to FastAPI in Python to authorized users with Bootstrap components as the frontend. Followed SDLC
- Designed and implemented features for assigning, tracking, and managing bug reports, ensuring only registered and authorized users could access specific functionalities through a RESTful API, querying a SQLite database using SQL
- Thoroughly tested and debugged all features using unit and integration testing approaches in PyTest

Interpreter for BASIC-like language | *Java, ANTLR, Git* — Github/SIMPLE-Interpreted-Language
- Independently built and Extended a Programming Language from a specification to exercises best practices in data structures and algorithms for this product.
- Implemented a BASIC clone language with more than 20 functions in order to make a Calculator
- 700 LOC in pure Java with a functionality tree of requirements first written in ANTLR's EBNF grammar

Autonomous Arm Robot | *Embedded C, C++, computer vision, ARM, electronics* — Github/RollingArmRobot
- In a 4 person team, Built a Machine Vision guided autonomous robot to navigate and clean a space, combining a single board computer, a camera and computer vision, embedded microcontrollers, custom PCBs
- Developed C++ and OpenCV code for RealSense 3D Camera to detect littered cans with 80% accuracy using a machine learning model
- Wrote Linux interface cron job code in C++ and BASH on UPBoard SBC to communicate with custom PCB and ARM controller through GPIO

Deep Neural Networks on Crime Statistics | *Pytorch, Pandas, Matplotlib, Numpy* Github/pattern-recognition
- Took a real-world open dataset of crime statistics in a city and ran machine learning models in Pytorch, visualized results using Matplotlib, in order to rank and visualize geographical safety
- Ran AutoEncoders, and Variational AutoEncoder models on hundreds of incident data points, and iterated automated optimization for best results on the provided data, to provide easily interpretable results for user

Twitter Sentiment Analysis | *Tensorflow, Google Colab, Python* — Github/sentiment_analysis
- Cloud based, Jupyter notebook and Tensorflow to do a survey of AI computation for sentiment analysis
- Python implementation of a Sep CNN model for Twitter Analysis on 100000 on a single GPU
- Used Google Colab on a corpus provided by Kaggle using a variety of methods including Naive Bayes classifier

SKILLS

Languages: Python, C/C++, Embedded C, Java, SQL , Verilog, JavaScript, HTML/CSS, Golang
Frameworks: FastAPI, Flask, React, OpenGL
Developer Tools: Git, Docker, AWS, Visual Studio, Xilinx Vivado, Keil, ARM Cortex,
Libraries: Pytorch, NumPy, Matplotlib, OpenGL
Relevant Coursework: Advanced Data Structures and Algorithms, Quantum Computing, Operating Systems, Artificial Intelligence (AI), Programming Languages Theory, Cloud Computing with AWS, Computer Graphics, Computer Networks Interoperability, Computer Vision, Machine Learning, Embedded Systems, Object Oriented C++
Extracurricular: IHSS caretaker for elderly and mentally ill, SHPE Member