Leonard Garcia

323-434-5577 | leonardgarcia90@gmail.com | linkedin.com/in/leonardgarcia90 | github.com/leonardgarcia90

Education

California State University, Los Angeles — Los Angeles, CA

Master of Science (M.S.), Computer Science, GPA: 3.97/4.0 — Dec 2024

Master of Science (M.S.), Mathematics, GPA: 4.00/4.0 — Dec 2023

Bachelor of Science (B.S.), Mathematics, Applied Math Option, Major GPA: 3.85/4.0 — May 2021

Research and Professional Experience

Computer Scientist, Reliability and Maintainability — January 2025 – Present

Naval Air Warfare Center Weapons Division (NAWCWD) — *China Lake, CA*

- Performed statistical reliability analyses, including Weibull modeling, fault tree analysis (FTA), and failure modes and effects analysis (FMEA).
- Developed and maintained Python and MATLAB scripts for data analysis, test planning, and predictive maintenance modeling.
- Documented simulation workflows using Model-Based Systems Engineering (MBSE) tools such as SysML, ensuring traceability and integration with system architecture.

Biomedical Data Science Intern, Bruins-In-Genomics — June 2024 – August 2024

Institute for Quantitative and Computational Biosciences, UCLA — *Los Angeles, CA*

- Collaborated with researchers to develop multimodal machine learning algorithms that integrated both low-dose computed tomography imaging features and clinical features to enhance early lung cancer risk prediction.
- Applied various data fusion methods to deep learning models, including early and late fusion, to combine multimodal data sources and enhance the models' predictive accuracy.
- Conducted in-depth literature reviews on recent advancements in machine learning for medical imaging and data fusion techniques, applying insights to optimize model architectures.

Graduate Research Assistant, Department of Computer Science — August 2023 – December 2024

California State University, Los Angeles — *Los Angeles, CA*

- Developed and optimized predictive models (Ridge Regression, Lasso Regression, Random Forest, and XGBoost) to forecast health outcomes including COVID case rate, COVID death rate, and the rate of other diseases and health conditions within Los Angeles.
- Conducted an analysis of crime trends in Los Angeles, identifying spatial and temporal patterns in crime data using clustering algorithms and time-series analysis. Highlighted areas with increased crime rates, aiding city officials in optimizing resource allocation and improving public safety measures.

Projects

American Sign Language Identification using Convolutional Neural Networks

- Developed machine learning models to classify American Sign Language alphabet images, leading a team through the end-to-end machine learning pipeline, from data preprocessing to model evaluation.
- Trained and optimized traditional machine learning models (SVM, Random Forest, KNN) and deep learning models (CNNs), achieving a 96.38% accuracy with a deep CNN.

Monet Painting Generation with Deep Learning

- Trained various generative models such as DCGANs, WGAN-GP, and diffusion models on a dataset of Claude Monet paintings to produce realistic Monet-style images.
- Conducted extensive experimentation with model architectures, including the use of U-Net with cosine and linear scheduling for diffusion models, to optimize image quality and avoid common pitfalls like mode collapse.

Technical Skills

Machine Learning Tools: TensorFlow, Keras, PyTorch, Pandas, Numpy, Scikit-learn, NLTK, SpaCy, OpenCV
Programming Languages: Python, Java, C++, SQL, MATLAB, Javascript, R
Data Visualization: Matplotlib, Seaborn, Tableau
Other Technical Skills: Git, Docker, Linux, Microsoft Excel, ArcGIS
Mathematics: Probability, Statistics, Mathematical Modeling, Optimization, Numerical Analysis, Graph Theory