

EMMANUEL DE VERA

Machine Learning specialist with 2 years experience employing deep learning models, database management, and digestible data communication to inform project-specific insights. I offer proficiency in Python and R with a drive for continued learning.

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Impactful Projects



Big Data Analysis | Spark MLlib | Jun 2025

- Developed a complete regression pipeline using Apache Spark ML to predict student GPA from a dataset of over 900,000 records and 35 features. Exploratory data analysis through heatmaps and histograms informed appropriate scaling strategies and feature selection.
- Deployed code on a Hadoop cluster using HDFS, Yarn, and shell scripting, demonstrating hands-on experience with large scale analytics in a distributed computing environment.
- Investigated the impact of PCA dimensionality reduction and analyzed feature coefficients which were communicated verbally alongside a well-paced and structured presentation.

Natural Language Processing | Keras API | Mar 2025

- Engineered machine learning solutions to categorize real news articles as one of four genres: world, sports, business, and science. TF-IDF vectorization was explored in conjunction with scikit-learn classifiers Naive Bayes, KNN, and DTrees to benchmark classical approaches.
- Executed essential NLP preprocessing techniques such as tokenization, stopword removal, punctuation filtering, and lemmatization to convert raw text into clean and structured input.
- Architected a CNN using Sequential API, integrating pre-trained GloVe word embeddings to enhance semantic understanding, obtaining a reliable model with a test accuracy of 92.3%.

Computer Vision Project | Pytorch | Sep 2024

- Designed a convolutional neural network using Pytorch for multi-class image classification, achieving 30% greater accuracy over an MLP via attentive tuning of convolutional layers, filter sizes, pooling, and batches, alongside dropout and weight decay to minimize overfitting.
- Faster and efficient tuning was attained by learning to capitalize CUDA GPU acceleration.
- An inventive solution to address limited training size was utilizing stable diffusion to generate synthetic images. This enriched model robustness by training under diverse compositions.

Master of Artificial Intelligence
Victoria University of Wellington
2025

BSc, Computer Science, Data Science
Victoria University of Wellington
2022 - 2024

Tawa College
2017 - 2021

- Bachelor of Science with joint specialization in Artificial Intelligence and Cybersecurity
- Received the Tangiwai scholarship in 2022
- 2022, 2023, 2024 Dean's List placement
- Graduated BSc with an 8.58 GPA / 3.88 GPA

- Attained consistent top in class awards for physics, maths, economics, and design IT.
- Awarded Proxime Accessit to the Dux, 2nd highest academic student in my final year.

Non-AI Related Experience

**Relational Database
Modeling with PostgreSQL**

Mar 2025

- Transformed raw data and a project synopsis into a functional 8-table relational database via postgresSQL.
- Enforced apt foreign key, check, delete, and update constraints to guarantee data integrity and fluidity.
- Crafted optimized SQL queries featuring aggregation, joins, and nesting to facilitate precise data extraction.

**Data Acquisition and
Communication through R**

Mar 2024

- Automated web scraping through the rvest package, streamlining data retrieval from diverse web sources.
- Leveraged the tidyverse suite to perform effective data cleaning and transformation in preparation for modeling.
- Formulated polished visualizations using ggplot2 and RMarkdown to convey findings clearly and insightfully.

**Team Management and
Software Design using Java**

Sep 2023

- Led collaborative software architectural efforts using CRC cards and UML diagrams to deshroud team goals.
- Oversaw git version control, resolving merge conflicts and issues to establish a smooth development pipeline.
- Applied Java principles polymorphism, generics, and stream operations to recreate 1989 Chip's Challenge.

**FSM 2D Physics Passion
Project via Javascript**

Sep 2022

- Utilized matrices and trigonometry to produce robust and streamlined physics, enemy tracking, and collisions.
- Built modular finite state machines to administer state transitions with simplicity and maintainability in mind.
- Experimented with p5.js to port the project onto an accessible website with integrated responsive design.