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Machine Learning Engineer | Generative AI Developer

I am a **Machine Learning Engineer** with a strong background in mechanical engineering and experience in **generative AI** and advanced **machine learning technologies**. Using tools like **Python, Pandas, Numpy, Keras, Tensorflow, Scikit-learn, and OpenAI models, as well as other generative AI technologies like Stable Diffusion, LLaMA, and other large language models (LLMs),** I create innovative solutions for complex business challenges. My technical expertise is complemented by a proven track record in **leading multidisciplinary engineering teams**, process improvement, and **effective communication skills**, fostering successful collaborations. I am committed to leveraging my diverse skills in **machine learning and generative AI** to drive **innovation**, contribute to **impactful ML initiatives**, and continuously advance professionally.

Relevant work experience

Computer Science Expert AI Trainer at Scale AI Jan 2024 to date

- Develop and apply Reinforcement Learning from Human Feedback (RLHF) strategies to enhance chatbot naturalness and effectiveness for industry-leading clients.
- Employ advanced tools such as Scikit-learn, TensorFlow, PyTorch, Pandas, NumPy, SciPy, and Matplotlib, leading to significant improvements in AI system responsiveness and adaptability.

Machine Learning Engineer at AnyoneAI (Part-time) Nov 2023 to Apr 2024

- Automated product categorization for e-commerce with AI: Developed an image classification system to predict vehicle make and model from unstructured e-commerce images with 82% accuracy using CNNs and fine-tuning BERT. Included a Web UI, NoSQL database, Event Bus, and Inference System.
- Home Credit Risk Analysis: Created a machine learning model for home credit risk analysis with a dataset of 350,000+ transactions, achieving a ROC AUC score above 0.75 using DecisionTree, XGBoost, and LightGBM.
- Sentiment Analysis for Movie Reviews: Developed a sentiment analysis model for movie reviews using BoW, TF-IDF, and word embeddings, achieving a ROC AUC score of 0.96.
- Vehicle Image Classifier: Implemented a vehicle image classification system with 89% accuracy using transfer learning with ResNet and EfficientNetB0, incorporating background removal with Detectron2.
- Automated ELT Data Pipeline: Designed an ELT pipeline using SQLite, SQL, and Apache Airflow, automating data extraction and visualization with Matplotlib and Seaborn for a leading LATAM e-commerce site.

Main Technologies: Python, Pandas, Matplotlib, Seaborn, Airflow, Docker, html, Locust, Apis, SQL,

IT Advisor at Solución Empresarial 21 Jan 2022 to Nov 2023

- • Web development, animation production, and computer maintenance services.

Main Technologies: JavaScript, Python, 3d printing, Cura, Solid Edge, Html, CSS.

Project Manager at Capacítese21 SAS Jan 2018 to Dec 2022

Company dedicated to improve technology for education.

- Spearheaded the development of C21English, an interactive platform designed to teach English to school-aged children in Colombia.
- Led a multidisciplinary team comprising programmers, graphic designers, sound and video editors, and educators throughout all project phases.
- Ensured exceptional quality throughout the project lifecycle, resulting in a final product that has undergone rigorous testing with 200 children. The platform shows promise in positively impacting the opportunities available to Latin American youth.

Main Technologies: JavaScript, PHP, Html, CSS.

Project Engineer at Venemanufactura C.A. Jan 2013 to Dec 2021

Company dedicated to the development of prototypes and products for the general industry, founded in 2012.

- Initiated regular meetings with managers and owners of client companies, particularly in the manufacturing sector, to address their product development, prototype manufacturing, specialized machinery development, testing, and other production efficiency-related needs.
- Led the development process upon identifying the client's needs, primarily utilizing CAD tools, and often directing a multidisciplinary team of mechanical engineers, civil engineers, and architects.
- Employed cutting-edge technologies, integrating mechanics (CAD-CAM-CAE), electronics (Arduino, Raspberry Pi), and computer science (Python programming) to enhance efficiency and effectiveness in project execution.

Main Technologies: C++, Python, html, CSS, Solidworks, Mastercam, AutoCad, Catia, Arduino, Raspberry,

Other work experience

Manager of New Projects at Gurimetal CA Jan 2009 to Dec 2012

Company Product Design and manufacture for industry.

- My role in the Engineering department involved developing solutions with CAD for client requests and overseeing prototype production. I led meetings with national and international clients and suppliers, often traveling to their companies to verify their requirements for new products, check on the status of products already manufactured and shipped, and assess their satisfaction with our services.

Main Technologies: Solid Edge, AutoCad.

University Professor at Instituto Universitario Politécnico Santiago Mariño Jan 2007 to Jan 2009

University specialized in Engineering.

- As a university professor, I instructed courses encompassing heat transfer, materials resistance, electrical circuits, mathematics, and robotics, catering to students across different semesters enrolled in mechanical engineering, civil engineering, and systems engineering programs. My teaching approach centered on integrating contemporary technological tools and fostering multidisciplinary collaboration to offer practical applications of theoretical concepts. I consistently employed effective didactics to engage students and enhance their understanding of complex topics.

Main Technologies: Solid Edge, AutoCad, Excel, Ansys.

Projects

Image Classifier

- image classifier for humans and horses using Deep Neural Networks, achieving a 95% accuracy. DeepLearning.AI, 2023.

Country Segmentation

- I conducted a clustering analysis to segment countries based on socioeconomic data, providing valuable insights for marketing strategies. Platzi, 2023.

Customer Churn Analysis

- Logistic Regression model with Scikit-Learn, identifying key factors in customer churn. Platzi, 2023

Medical Expenses Prediction

- Linear Regression model using Scikit-Learn, achieving an 85% accuracy in predicting medical expenses. Platzi, 2023.

Skills

Tech Skills: Python, SQL, html, CSS, Apis, Tensorflow, Scikit Learn, Keras, Pandas, Numpy, Matplotlib, Seaborn.
Agile Methodologies: Scrum.
Languages: Native Spanish and B2-C1 English.

Education

Universidad Nacional Experimental del Táchira (UNET) Jun 2006
Mechanical Engineer

Certifications

Programming Focused on Machine Learning

- Professional Git and Github, Platzi, Apr 2022.
- Object-Oriented Programming, Platzi, Apr 2022.
- Intermediate Python: Comprehensions, Lambdas, and Error Handling, Platzi, Apr 2022.
- Python: PIP and Virtual Environments, Platzi, Jan 2023.
- Regular Expressions, Platzi.
- Python: Comprehensions, Functions, and Error Handling, Platzi, Jan 2023.
- Introduction to Computational Thinking with Python, Platzi, Mar 2022.

Fundamentals and Tools of Data Science

- Data Analysis with Pandas, NumPy, Matplotlib, and Seaborn, Platzi, Feb 2023.
- Ethics and Data Management for Data Science and Artificial Intelligence, Platzi, Feb 2023.
- Descriptive Statistics, Platzi, Feb 2023.
- Probability, Platzi, Mar 2023.

- Basic Differential Calculus for Data Science and Artificial Intelligence, Platzi, Apr 2023.
- Fundamentals of Linear Algebra with Python, Platzi, Apr 2023.
- Fundamentals of Databases, Platzi, Jun 2023.
- Business Intelligence: Utility and Areas of Opportunity, Platzi, May 2023.
- Data Manipulation and Transformation with Pandas and Numpy, Platzi, Feb 2023.
- Data Visualization with Matplotlib and Seaborn, Platzi, Feb 2023.
- Principles of Data Visualization for Business Intelligence, Platzi, May 2022.

Machine Learning and Deep Learning

- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning, Coursera, Dec 2022.
- Artificial Intelligence Tools for Developers, Platzi, Jul 2023.
- Artificial Intelligence with CHATGPT, DALL-E and HUGGING FACE, Platzi, Apr 2023.
- Introduction to Machine Learning by MINDSDB, Platzi, Apr 2023.
- Logistic Regression with Python and scikit-learn, Platzi, Jun 2023.
- Linear Regression with Python and scikit-learn, Platzi, Jun 2023.
- Clustering with Python and scikit-learn, Platzi, Jun 2023.

Cloud Computing and BI

- Introduction to Cloud Computing with Azure, Platzi, Mar 2023.
- Digital Ocean, Platzi, Jan 2023.
- Tableau: Data Visualization and Storytelling for Business, Platzi, Jan 2022.
- Business Analysis for Data Science, Platzi.