


Müsel Emmanuel Tabares Pardo


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About

Profile  Looking for a Master's students Internship at Mistral. The more complex and difficult a problem is, the more I'm willing to take it on. I dream of becoming the best.


Experience

- 10/2023 – 01/2024

 **Machine Learning Engineer**

Moodme | United States

 - Designed and deployed real-time facial emotion recognition systems using deep learning-based computer vision techniques.
 - Implemented a Graph Auto-Encoder (GAE) to learn latent representations of facial landmarks for a Unity 3D Face SDK, enabling identity-preserving expression synthesis and emotion classification.
- 04/2023 – 08/2023

 **Data Analyst**

CEMEX | Monterrey, Mexico

 - Conducted advanced data analysis using SQL; built interactive Power BI dashboards to support Product Management decisions.
 - Developed predictive and statistical forecasting models to assess user behavior trends and adoption metrics for CEMEXGO.

Education

- 05/2025 – Current

 **Erasmus Mundus Master in Advanced Machine Learning and Optimisation Systems (EMSSE)**

Université de technologie de Compiègne | Compiègne, France
- 03/2025 – 06/2025

 **Erasmus Mundus Master in Advanced Machine Learning and Optimisation Systems (EMSSE)**

Universiteti Politeknik i Tiranës | Tirana, Albania
- 09/2024 – 01/2025

 **Erasmus Mundus Master in Advanced Machine Learning and Optimisation Systems (EMSSE)**

Universitat Politècnica de Catalunya | Barcelona, Spain
- 08/2023 – 12/2024

 **Specialization in Advanced Artificial Intelligence Applied to Data Science**


Monterrey Institute of Technology and Higher Education | Guadalajara, Mexico
- 08/2021 – 06/2024

 **B.S. in Computer Science and Technology**

Monterrey Institute of Technology and Higher Education | Monterrey, Mexico

Projects

- Medical LV Segmentation

 U-Net for left-ventricle segmentation on Stanford EchoNet-Dynamic; compared pixel-wise masks vs. landmark detection; used Dice score and morphology post-processing.

TECH: PyTorch, OpenCV, Albumentations

LINK: <https://github.com/Tec-AI-23/EchoNetDynamic>

Projects (continued)

Human Activity Recognition	Evaluated 18 ML algorithms with grid search on accelerometer data to classify activity levels in older adults; validated via CV and significance tests. LINK: https://github.com/Tec-AI-23/HAR70
Advanced Statistical Learning	From-scratch implementations of Monte Carlo, Bootstrap, PCA, regression (Ridge/Lasso), and classifiers with annotated theory and real datasets. LINK: https://github.com/musel25/Advanced_Machine_Learning
Hydrological Forecasting	Deep CNN pipeline predicting river stage from imagery; EfficientNet transfer learning and multi-modal inputs (visual + hydrological) for accuracy gains. LINK: https://github.com/musel25/research_deep_learning
LLM + RAG for Metaheuristics	Automated framework using RAG + LLMs to generate and refine metaheuristics for black-box optimisation; integrated Qwen2.5-coder, ChromaDB, and Optuna. LINK: https://github.com/musel25/llm-metaheuristics
Nusselt–Reynolds via CFD	ANSYS CFD of forced convection over heated sphere; mesh convergence and validation against empirical Nu–Re correlations across Re regimes.
Flow Shop Scheduling	MILP in Python (PuLP) to minimise makespan and CO ₂ -eq emissions with big-M sequencing and weighted objective trade-offs. LINK: https://github.com/musel25/industrial_automation
Ramp Metering (ALINEA)	Freeway simulation evaluating open- vs closed-loop ALINEA across 10 demand scenarios using density, outflow, and average freeway KPIs. LINK: https://github.com/musel25/actm_control
Obesity Level Estimation	End-to-end classification on UCI obesity dataset; DR (PCA, t-SNE), mutual information, 31 models; best: XGBoost (96%). LINK: https://github.com/musel25/obesity_ml
CV Papers Review	Annotated reviews of 30+ core computer vision papers (ImageNet, CNNs, transfer learning, detection). LINK: https://github.com/musel25/cv_papers_review
NLP Projects	DistilBERT sentiment analysis, Levenshtein spell checker, and Keras RNN text generator with temperature tuning. LINK: https://github.com/musel25/nlp_projects
Leukocyte CNN + LIME	CNN to classify leukocytes (cancerous vs non-cancerous) with LIME explanations to highlight decision-driving regions.
Fine-tuned GPT-2 Chatbot	Fine-tuned GPT-2 on WhatsApp chats; regex parsing to HF Datasets; trained and deployed interactive chatbot pipeline. LINK: https://github.com/musel25/her_if_it_was_2025
NLP Web App	Real-time text emotion classifier with logging and analytics; built using Streamlit and standard NLP preprocessing. LINK: https://github.com/musel25/nlp_project

Skills

Core Focus	Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, Optimisation
Programming	Python, SQL, Bash; \LaTeX

Skills (continued)

ML/DL	PyTorch, TensorFlow/Keras, scikit-learn, Optuna, XGBoost, Lightning, Albumentations
CV	OpenCV, segmentation & detection, landmarks, GAE/autoencoders, EfficientNet, U-Net
NLP	Hugging Face Transformers, tokenisation, fine-tuning, RAG, text classification
Data	Power BI, pandas, NumPy; data pipelines, EDA, statistical modelling
Platforms	Unity (Face SDK integration), Git/GitHub, Linux, Docker

Languages

Mother Tongue	Spanish
English	Listening C2 Reading C2 Writing C1 Spoken Production C1 Spoken Interaction C1
French	Listening B2 Reading B2 Writing B1 Spoken Production B1 Spoken Interaction B1
German	Listening A2 Reading A2 Writing A1 Spoken Production A1 Spoken Interaction A1
Albanian	Listening A2 Reading A2 Writing A1 Spoken Production A1 Spoken Interaction A1

Volunteering

08/2018 – 07/2020	Leader, ProV Led a social aid organisation supporting vulnerable communities across Tijuana, Baja California. Coordinated humanitarian initiatives including food preparation and distribution, fundraising, donation logistics, orphanage support, and elderly care. Oversaw volunteers, organised events, and optimised resources to maximise impact. LINK: https://www.facebook.com/groups/782118565323194	Mexico
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References

Available on Request