EMA ILIC

AI/ML ENGINEER, GENERATIVE AI

📱 +385 99 3749 704

✉ ema.ilic9@gmail.com

🌐 Linkedin and Medium

📍 Rijeka, Croatia

SKILLS

- RAG (Vector DB: Pinecone)
- AI Agents (Langchain)
- MLOps: IaC and CICD with Terraform and Github Actions
- VertexAI and Google Cloud Platform (GCP)
- Docker
- Python and AI APIS (OpenAI, Huggingface, Tensorflow, Langchain, Pytorch, Pandas, PIL, OpenCV...)
- Linux, Bash, Git
- Image Generation: Stable Diffusion, Dreambooth, Dall-E, Midjourney
- Monitoring AI systems: Langfuse & Langsmith
- Data Warehousing and ETL in SSMS
- Transact-SQL, OLAP Cube, MDX
- Hadoop/Apache Spark (MapReduce)

PUBLICATIONS

A review of Text Classification Models: from Bayesian to Transformers; Ilic, Garcia Martinez, Souto Pastor; SwissText Conference, Lugano, Switzerland (CEUR-WS, September 2022)

PROFILE

AI/ML Engineer with 4 years of experience in developing and deploying systems for text and image generation, classification, and retrieval. Experienced in building and maintaining AI and LLM systems in production, ensuring scalability, reliability, and continuous evaluation. Contributed to a project showcased at Google I/O 2023 in San Francisco. Co-authored a paper presented at the SwissText Conference 2022 in Lugano, Switzerland. Author of a blog focused LLMs.

WORK EXPERIENCE

AI/ML Engineer, Generative AI

CHAPTR, A Holtzbrinck Business, Remote   Nov 2022 - Present

- Led the implementation of an Evaluation System for RAG pipeline
- RAG Prototyping and Implementation: Large-document ingestion, querying with Pinecone, OpenAI embeddings, and models
- LLM APIs for narrative generation and chatbot building (OpenAI, Gemini, Gemma, Anthropic Claude)
- Led topic modeling of chats
- Prototyped Agent based evaluation and brainstorming systems (LangChain)
- MLOps/LLMOps: Iac with Terraform, CICD with Github Actions, Docker
- Images: training, fine-tuning and prompting diffusion models (Stable Diffusion, DreamBooth, DALL·E, Midjourney)
- Tech stack: Python, LangChain, Agents, Langfuse, GCP (Firebase, BigQuery, Cloud Function, Google Cloud Storage, Cloud Run, Compute Engine and Virtual Machines, IAM Security, VertexAI)

NLP Scientst

Pangeanic S.L, Valencia, Spain   Jul 2021 - Mar 2022

- Fine-tuning multiclass and binary LLM (BERT & GPT-2) for text classification on two datasets (99% Accuracy and 98% F1)
- Co-authored a research paper presented at SwissText conference
- Tech stack: Python, Huggingface, Pytorch, ScikitLearn, Jupyter Notebook

Research Scientist (Computer Vision)

University of Las Palmas de Gran Canaria, Spain   Jan 2022- Oct 2022

- YOLOv5 for object detection: 96.41% F1 on an object detection task
- Semantic segmentation (UNET) and VGG16 classifier
- Achieved 3.6x better results (P, R, F1) than the state of the art model
- Tech stack: Python, Tensorflow, Pytorch, ScikitLearn, Keras

✨ If you are still reading this: Check out my Linkedin and Medium articles and the newsletter I'm coauthoring for recent paper reviews and advice on most common issues in AI products ✨

EMA ILIC

AI/ML ENGINEER, GENERATIVE AI

EDUCATION

Master's Degree in Data Science
University of Pisa, Italy
2019-2022
Award: Merit-Based Scholarship for Deserving International Students by the University of Pisa

Master's Degree in Data Science [Exchange Semester]
Polytechnic University of Madrid, Spain
2021-2021
Department of Computer Science

Bachelor's Degree in Business and Economics
University of Bologna, Italy
2016-2019
Award: 2nd Place at Procter&Gamble Marketing Research Project on Head&Shoulders Product Line in Digital Environment

----

LANGUAGES

English, Spanish, Croatian, Italian

Computer Vision Engineer

Secret Source S.L., Canary Islands, Spain   Sep 2021 - Dec 2021

- Built ML backend of a classification pipeline (ResNet34, 50 & 101) for 40+ construction machines for a client, later turned into an android app
- Data preprocessing and cleaning
- Tech stack: Python, Tensorflow, Pytorch, ScikitLearn, Keras, Pandas

MODELS

- Traditional Models: Naive Bayes, Support Vector Machines, Logistic Regression, KNN, Decision Trees
- Ensembles: Random Forest, Bagging, Boosting
- Neural Networks: Convolutional, Recurrent, Residual, LSTM, Graph, Deep
- Advanced models: GPT-2 and BERT (finetuning), GPT-3, GPT-4, Gemini, Gemma, Claude (API), YOLOV5, VGG16, UNET,
- Clustering: K-Means, DB Scan, Transactional Clustering
- Time Series Forecasting & Analysis: ARIMA, SARIMAX, Dynamic Time Warping, Motifs, Shapelets
- Sequential Pattern Mining: GSP Algorithm
- Outlier & Anomaly Detection: ABOD, LOF, KNN, COF, INFLO, Grid-Based
- Dimensionality Reduction: PCA, SVD, UFS, RFE
- Analysis of Sensor Data: Predicting room occupancy based on light, CO_2, humidity, temperature, and time
- Advanced Classification: SVM, Convolutional and Recurrent Neural Networks, Deep Neural Networks, Ensemble Classifiers

✨ If you are still reading this: Check out my Linkedin and Medium articles and the newspaper I'm coauthoring for recent paper reviews and advice on most commn issues in AI products✨