europass

Ehsan Mokhtari

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Github: https://github.com/sherlannn

Gender: Male **Date of birth:** 22/06/1997 **Nationality:** Iranian

ABOUT ME

I am a Master's student in Data Science at Sapienza University of Rome with a background in Computer Engineering and a strong focus on Machine Learning, Neural Networks, RAG systems, and generative modeling. My academic work spans topics such as diffusion models, conformal prediction, computer vision, graph neural networks, large language models (LLMs), and Graph RAG. I aim to apply generative and retrieval-augmented models to solve complex real-world problems across domains such as vision, language, and decision-making.

EDUCATION AND TRAINING

[10/2023 – Current] **M.Sc Data Science**

University of Sapienza https://www.uniroma1.it/it

City: Rome | **Country:** Italy |

- Advanced Machine Learning
- Neural Networks
- Computer Vision
- Statistical Learning
- Advanced Data Mining And Language Technology

[2016 – 2021] **B.Sc Computer Engineering**

University of Tabriz https://www.tabrizu.ac.ir/

Address: 29 Bahman Blvd, 5166616471, Tabriz, Iran |

WORK EXPERIENCE

ENEL Group https://www.enel.com/it

City: Rome | **Country:** Italy

[06/2025 – Current] **Data Science & AI Intern - Master Thesis**

Rural Cooperatives Organization of Iran https://www.corc.ir/

City: Marand | **Country:** Iran

[10/2020 – 12/2020] **Software Engineer Intern**

Gaining experience in software development, hardware integration and troubleshooting, which resulted in enhancing my technical skills in real-world projects and teamwork.

LANGUAGE SKILLS

Mother tongue(s): Azerbaijani , Persian

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Italian

LISTENING A2 **READING** A2 **WRITING** A2

SPOKEN PRODUCTION A2 **SPOKEN INTERACTION** A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

[2020] **Color Image Encryption Algorithm Based on Three-Dimensional Chaotic Economic Map**

Reference: Dr. Mohammad Asadpour, Ehsan Mokhtari

5th international conference on applied research in computer, electrical and information technology / Avicenna international community college LLC, Georgia

SKILLS

Programming Languages (Python, R, C/C++, Matlab) | Data Analysis & Manipulation (SQL, Numpy, Pandas) | Data Visualization (Matplotlib, Seaborn) | Machine Learning Frameworks (Scikit-learn, TensorFlow, Keras, PyTorch) | Deep Learning & Neural Networks | Database Management Systems(PostgresSQL, Neo4j, MongoDB) | Image Processing (OpenCV) | Natural language Processing | Operating Systems (Linux, Windows) | Version Control (Git) | Microsoft Office | Microsoft Teams

PROJECTS

[02/2025 – 06/2025] **University Project : Diffusion Based Generative Age Estimation with Conformal Prediction**

Built a text-conditioned diffusion model trained on the UTKFace dataset to generate realistic face images based on age, gender, and ethnicity prompts. Evaluated the consistency of synthetic outputs by testing whether a conformal prediction-based age estimator produced calibrated intervals that captured the target ages.

Link: https://github.com/sherlannn/Diffusion_Based_Generative_Age_Estimation_with_Conformal_Prediction

[05/2025 – 07/2025] **University Project : Linear Diffusion Models for Generative Image Synthesis**

Developed a linear diffusion model for MNIST image generation using classical ML components, PCA for encoding and multivariate linear regression for denoising, offering a fully interpretable alternative to neural network-based diffusion. Enhanced the model with nonlinear encoders, cosine noise scheduling, and accelerated sampling, and evaluated output quality using classifiers and conformal prediction techniques.

Link: https://github.com/sherlannn/Linear_Diffusion_Models_for_Generative_Image_Synthesis

[12/2024 – 01/2025] **University Project : Virtual Piano Using Hand Gesture Recognition**

Developed a computer vision-based virtual piano using hand gesture recognition. Implemented multiple approaches, including contour-based detection, difference-based tracking, and MediaPipe Hands for real-time finger movement detection. Optimized accuracy, computational speed, and real-time note playback using MIDI integration.

Link: https://github.com/sherlannn/Virtual_Piano_Using_Hand_Gesture_Recognition

[10/2024 – 12/2024] **University Project : Graph Neural Networks for Road Safety Modeling**

Developed a Graph Neural Network (GNN) model to predict traffic accidents by analyzing spatial-temporal patterns in road networks. Integrated road slope data as a novel feature to enhance predictive accuracy. Conducted data preprocessing, feature engineering, and model optimization, achieving an improved ROC-AUC score (82.62% → 83.22%) and higher precision in accident prediction.

Link: https://github.com/sherlannn/Graph_Neural_Networks_for_Road_Safety_Modeling

[11/2024 – 01/2025] **University Project: Putative Disease Gene Identification and Drug Repurposing for High Blood Pressure**

Utilized bioinformatics and network medicine to identify HBP-related genes and repurpose existing drugs. Built a disease interactome using PPI and GDA data, applied machine learning algorithms for gene prediction, and conducted enrichment analysis. Identified 100 putative genes and validated drug candidates using clinical trial data.

Link: https://github.com/sherlannn/Putative_Disease_Gene_Identification_and_Drug_Repurposing_for_High_Blood_Pressure

CERTIFICATES AND COURSES

Data Scientist with Python / Machine Learning Scientist with Python / Advanced Deep Learning in Python / Data Analysis and Visualization with Python / Image Processing with Keras and OpenCV / Advanced SQL for Data Science

Scientific Computing with Python / Natural Language Processing and Feature Engineering for NLP in Python / Essential Math and Applied Algorithms for Machine Learning

TRAINING CAMPS AND COMPETITIONS

[11/2024 – 11/2024] **BESTech'24 Rome Competition**

Developed a ChatGPT-based assistant for the BESTech'24 competition, focused on occupational law. The chatbot answered legal queries and analyzed work contracts, helping users access relevant legal information easily.

[07/2024 – 07/2024] **Sapienza-KPMG Forecasting 2024 - Training Camp**

Competed in the Sapienza-KPMG Forecasting 2024, focusing on predicting sales volume using time series data. Applied Machine Learning and Time Series Forecasting techniques, considering factors like seasonality and trends. Used Time-Fold Cross Validation to improve accuracy in forecasting the next four months of sales.

[2024 – 2024] **dock3 - The Startup Lab 7th Edition**

Participated in dock3's Startup Lab competition, initially exploring physiognomy in fashion and HR, then pivoted to building a platform for matching candidates to jobs based on their skills. Due to time constraints and resource challenges, the project remained unfinished, but it offered valuable insights into startup development and team collaboration.

COMMUNICATION AND INTERPERSONAL SKILLS

Capable of both teamwork and individual-work / Strong communication and collaboration skills / High responsibility / Problem-solving / Leadership / Flexibility