

# Gianfranco Romani

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## WORK EXPERIENCE

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### Thomson Reuters - Applied Research Intern in NLP

Zurich (CH), Aug 2023- Jan 2024

- Actively developing core components of the company's upcoming product in the Tax and Accounting field;
- Collaborating with stakeholders and closely engaging with SMEs to optimize product development;
- Collaborating with UX and accessibility experts to design a product based on generative AI technologies;
- Participating in a mentorship program focused on Engineering practices, MLOps, and AWS cloud services.

### SafEcho AG - Data Science Intern

Remote, May-Jun 2023

- Conducted research on agents for a chatbot specialized in Occupational Safety and Health
- Generating and enhancing datasets for fine-tuning models using OpenAI API
- Build a Q&A system for tabular data with Haystack

### AI Fellow at Pi School

Rome (IT), Mar-Apr 2023

- Selected to work with Translated on the usage of Large Language Models for an Adaptive Machine Translation task.
- I fine-tuned BLOOM and FlanT5 models using PEFT methods on multi-node and multi-GPU systems.
- I designed prompts to make the models follow consistency constraints for style, terminology, and domain when translating.

### Organization of swimming events

Rome (IT), 2016 – 2018

- I organized several swimming events (1st-2nd-3rd Meeting Olgiata 20.12, 9th-10th Memorial Brunelleschi, and 1st Memorial Enzo Feoli), managing people and time with tight deadlines and 1000+ participants.
- I mainly worked on the management system to enter the event's participants and the results during the races.

## EDUCATION

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### Sapienza Università di Roma

Rome (IT), Nov 2020 - Jan 2023

MSc in Engineering in Computer Science

Thesis: A Review of Topic Modeling Techniques and Experimental Evaluation in Analysis of Touristic Experience

Relevant Courses: Deep Learning, Machine Learning, Data Mining, Web Information Retrieval, Big Data Computing

### Sapienza Università di Roma

Rome (IT), Oct 2017 - Oct 2020

BSc in Computer and Systems Engineering

Thesis: Application and optimization of YOLO tiny for object detection in Duckietown's environment

## PROJECTS

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### Analysis of players' potential in a MOBA game using GCP

Jun 2022

- ETL process for Information Integration on several datasets to obtain a homogeneous database
- Designed and built a Data Warehouse system with Google BigQuery
- Reports and interactive dashboards with Google Data Studio
- Tools: Google Cloud Platform

### Detection of persuasion techniques in memes (SemEval 2021 Task 6) ([Link to the repository](#))

Mar 2022

- Implemented, compared, and improved several SOTA models for the tasks. The metrics used are micro and macro F1 scores.
- Detecting persuasion techniques in just the text
- Detecting the text spans where such techniques were used
- Detecting the techniques using both the text and the image
- Tools: Python, Hugging Face, Pytorch Lightning, and Google Colaboratory

### Neural Search Engine ([Link to the repository](#))

Feb 2022

- Designed and implemented a neural search engine for questions/answers from Stack Overflow
- Tools: Python, Hugging Face, Pytorch, Jina AI Framework, and Google Colaboratory

## ADDITIONAL

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### Technical Skills:

- Python (Pytorch, Tensorflow, HuggingFace, LangChain, LlamaIndex, Scikit-learn, OpenCV, Matplotlib, Plotly, PySpark, numpy, pandas, spacy, gensim, wandb, FAISS, Hydra)
- AWS (S3, Sagemaker)
- GCP (Data Studio, BigQuery)
- Linux, Git, GitHub, PostgreSQL, Docker, Jira, Asana

**Languages:** Fluent in Italian and English, basic in German

## CERTIFICATION & TRAINING

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### Building AI Products with OpenAI:

- Built a podcast summarizer and extractor of main information using Whisper and GPT models through OpenAI API

### MLOps essentials: Model development and integration:

- MLOps principles;
- ML requirements and life cycle;
- data pipelines and deployment

### AI Workshop on Recommender Systems by cnvrg.io:

- Workshop on the usage of the cnvrg.io platform to build ML pipelines;
- AI Blueprints for Recommender Systems

### Building Recommender systems using ML and AI:

- user-based and item-based collaborative filtering;
- scale deep learning-based recommender systems;
- build and test recommenders using the Surprise library;
- hybrid and ensemble methods;
- session-based recommendations with neural networks

## ACTIVITIES

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**Red Cross Volunteer**

2016

**Master swimmer**

Participated in the European Masters Swimming Championships 2022 held in Rome