# GIOVANNI ROSA


**AI Engineer @ Technology Reply**

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## WORK EXPERIENCE

**AI Engineer** — **Technology Reply**, Padua, IT

Python | Scikit-Learn | OpenAI | GenerativeAI | Prompt Engineering | NLP | Clustering | RAG | LangChain | R&D | Feb 2024 – Current

- My role is to apply Machine Learning and GenAI to software development and operations practices
- My day-by-day activities include the identification of critical business use-cases in which AI-based solutions can be leveraged to solve them.

**Machine Learning Research Engineer** — **University of Molise**, Nova Tellus project

Docker | Python | Pandas | Scikit-Learn | Git | FastAPI | Apr 2023 – Oct 2023

- Served as a machine learning scientist in the Nova Tellus project (funded by the EU).
- The project applies Industry 4.0 in the agricultural domain, by involving the collaboration of several industry partners and institutions.
- I developed and validated a set of classifiers aimed at proposing recommendations for agricultural practices.

**Software Engineer** — **Freelancer**, First-Aid App

CSS | TypeScript | HTML | Postgres | Ionic | Angular 8+ | SpringBoot | REST API | Nov 2020 – Jan 2021

- Design and development of a life-saving mobile app to call nearby BSLD operators in case of heart-related emergencies.
- The main feature was the usage of real-time notifications for immediate response during the emergencies, where I used geoqueries and geolocation to locate nearby operators.

**Machine Learning Research Engineer** — **University of Molise**, ATTICUS project

Kubernetes | Docker | Python | Android | Scikit-Learn | Git | Tensorflow | Android | BLE | GATT | Apr 2019 – Oct 2020

- Served as a machine learning scientist for the ATTICUS research project (funded by the EU), in which several institutions and companies collaborated to design, develop, and validate an IoMT system for the monitoring and early detection of health anomalies via machine learning
- My role involved the development and validation of several machine-learning approaches to detect health related anomalies, and the build and deploy of all the system components (i.e., backend, frontend, database, DSS, and ML services).

**Software Engineer** — **Freelancer**, CARUSO bot

HTML/CSS | JavaScript | Python | NLTK | HuggingFace | BERT | Docker | Mar 2020 – Apr 2020

- I designed and developed a chatbot fine-tuned on scientific articles to answer questions on COVID-19
- The aim was to provide a reliable source of information to avoid the diffusion of fake news

**Software Engineer** — **Freelancer**, SearchEngine4Legal

Wordpress | SpringBoot | Elasticsearch | NLP | REST API | Web crawling | Docker | Feb 2019 – Apr 2019

- I designed and developed a prototype for a search engine specifically designed for legal documents
- The aim was to provide a reliable source of information to avoid the diffusion of fake news

## EDUCATION

**PhD in Software Enginnering** — **University of Molise**

Graded as "Excellent" by the evaluation committee - "European PhD" label | Nov 2020 - Apr 2024

- My research activity has been focused on the quality and maintenance of Docker artifacts, aimed at proposing new approaches and guidelines for developers to support them during the development activities
- I served as teaching assistant for the machine learning and programming courses, including the mentoring of more than 15 students during their thesis projects
- I co-authored more than 20 research articles regarding applied machine learning, testing and maintenance
- I actively contributed to the research community by serving as a reviewer, and presenting my research to 7 different international conferences

**Master's degree in Security of Software Systems** — **University of Molise**

110/110 (cum laude) | Oct 2018 - Oct 2020

- The degree course aimed to provide a 360 knowledge on how to manage software systems and new technologies ensuring the best practices to mitigate cybersecurity risks

- The topics covered by the courses include software engineering, machine learning, cyber security, semantic intelligence, and optimization algorithms

## SELECTED PUBLICATIONS

C1. **Rosa, G.**, Mastropaolo, A., Scalabrino, S., Bavota, G., and Oliveto, R. (2023, May). Automatically Generating Dockerfiles via Deep Learning: Challenges and Promises. *In 2023 IEEE/ACM International Conference on Software and System Processes (ICSSP) (pp. 1-12)*. IEEE.

J2. **Rosa, G.**, Scalabrino, S., Bavota, G., and Oliveto, R. (2023). What Quality Aspects Influence the Adoption of Docker Images?. *ACM Transactions on Software Engineering and Methodology*, *32(6)*, 1-30

J1. Guglielmi, E., **Rosa, G.**, Scalabrino, S., Bavota, G., and Oliveto, R. (2024). Help Them Understand: Testing and Improving Voice User Interfaces. *ACM Transactions on Software Engineering and Methodology*