

Giovanni Rosa

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Previous role	Machine Learning Research Engineer at Nova Tellus project, University of Molise
Technologies	Docker, Python, Pandas, Scikit-Learn, Git, FastAPI, CSS, TypeScript, HTML, Postgres, Ionic, Angular 8+, SpringBoot, REST ...

I want to work for a company that...

Values a good work-life balance and offers various opportunities to grow and learn new things

Work experience

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

Apr 2023 – Oct 2023 (6m)

Docker Python Pandas Scikit-Learn Git FastAPI

- 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 partner institutions;
- My role involved the development and validation of a set of classifiers to serve as a decision support system for agricultural practices
- I also contributed to the processing of IoT data for the training and validation procedures

Freelancer Developer, First-Aid App

Nov 2020 – Jan 2021 (2m)

CSS TypeScript HTML Postgres Ionic Angular 8+ SpringBoot REST API

- Design and development of a life-saving mobile app to call nearby BSLD operators in case of heart-related emergencies.
- Exploited geoqueries and geolocation to locate nearby operators
- Implemented real-time notifications for immediate response during the emergencies

Machine Learning Research Engineer, ATTICUS project, University of Molise

Apr 2019 – Oct 2020 (1y 6m)

Docker Kubernetes Python Android Scikit-Learn Git

- Served as a machine learning scientist for the ATTICUS research project (funded by the EU), in which six institutions collaborated to design, develop, and validate an Internet of Medical Things (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. I also managed the DevOps pipeline of the project, including the deployment of the ML models.
- Acquired skills in Decision Support Systems (DSS), Kubernetes, git, GitLab CI/CD, Docker, Scikit-Learn, TensorFlow, Android, Bluetooth Low Energy (BLE), GATT server and client.

CSS HTML JavaScript Python NLTK

- Developed a chatbot to answer COVID-19 related questions based on a knowledge base of scientific articles
- The aim was to provide a reliable source of information to avoid the diffusion of fake news
- Acquired expertise in HuggingFace and BERT (LLM), Natural Language Processing (NLP) techniques through hands-on development and implementation of the chatbot

Elasticsearch SpringBoot REST API

- Designed and developed a prototype of a search engine specifically designed for legal documents.
- Developed expertise in Elasticsearch, Spring Boot, Natural Language Processing (NLP), and web crawling techniques.

Education

Ph.D. Software Engineering

- My primary focus is to study the quality and maintenance of Docker artifacts
- I participated in various international conferences presenting my research results
- I also served as a teaching assistant and as a research engineer in applied research projects involving practical applications of machine learning methods.
- More details can be found on my academic website (giovannirosa.com)

Visiting PhD Student Software Engineering

- Visiting period as a PhD student under the supervision of Prof. Gregorio Robles.
- We conducted an empirical analysis of the design flaws (smells) present in Dockerfiles.

Master's Degree, Software Systems Security, *110 cum laude*

- During my master's degree I learned concepts covering security, machine learning, optimization methods, and project management.
- My best achievement was in the project management exam. I successfully led a group of ~20 students in the design and development of a messaging system, integrated into the official university app, using MongoDB, MySQL, Ionic, Socket.io, and NodeJS. The group composed of my students was the best performer among the others.
- My thesis consisted of a research work on software bugs conducted in collaboration with USI. Next, we submitted and presented it at the ICSE 2021 conference (CORE A*).

Visiting Master Student Software Engineering

- The visiting period covered the first part of my master's thesis project in collaboration with USI.
- The topic of the thesis was an empirical study of the SZZ algorithm, which allows the identification of bug-inducing commits.
- The final work was submitted and presented as a scientific paper at the ICSE 2021 conference.

University of Molise

Oct 2015 – Dec 2018 (3y 2m)

Bachelor's Degree, Computer Science, *110 cum laude*

CREST, University College London

Mar 2018 – Jun 2018 (3m)

Erasmus Taineeship Computer Science

- Erasmus traineeship period at UCL CREST research group under the supervision of Prof. Jens Krinke for my bachelor's thesis project.
- During the visiting period, I contributed to a scientific research project evaluating how developers perform code reviews and how they deal with code smells and coding conventions.
- Part of the work was submitted and presented at SCAM 2020.

Snippets

PySZZ @ [github.com](#)

An open-source implementation of several versions of the SZZ algorithm for detecting bug-inducing commits. Currently, it is used by the research community.

MonUP @ [github.com](#)

Open-source Android app to show crypto prices and news.

Available for free in the Google Play Store. Currently suspended because it is undergoing maintenance.

MicrosatCUDA @ [github.com](#)

A CUDA porting of MicroSAT, a tool implementing a SAT solver used for software verification.

More about me

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Interests

Video games, bike riding, music and films

Languages spoken

Italian, English