

# Raffaello Fornasiere

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## Summary

I am a software engineer with applied experience in full-stack development and academic experience in AI/ML. I have built web applications and integrated LLM features into production-ready systems. I aim to deliver a strong user experience and ensure high-quality, maintainable, and scalable software.

## Professional Experience

**Lead Front-End Engineer**, Infiniteloop (October 2022 - Present)

- Designed and maintained front-end architecture using Angular, to ensure seamless integration with JHipster framework by implementing a side-by-side approach to combine generated and custom code, to enable maintainability and flexibility during system upgrades.
- Integrated LLMs into healthcare applications to automate medical report generation.
- Regularly implemented APIs and back-end features.
- Mentored two junior developers and promoted best practices to improve code quality and team collaboration.

**Junior Full Stack Developer**, Prodigys Group (July 2021 - September 2022)

- Developed and maintained both front-end and back-end components using Angular, Spring Boot, and Django.
- Improved database performance through SQL query refactors and workflow optimizations, to reduce execution times from hours to minutes

## Education

**Master's in Computer Science and Engineering**, Politecnico di Milano (Graduated July 2024)

- Thesis: Exploring the Potential of Lightweight LLMs for Medication and Timeline Extraction.
- Developed a web application to validate the thesis research, **currently being tested in three Italian hospitals**

**Bachelor's in Electronics Engineering**, Università degli Studi di Udine (Graduated July 2020)

- Thesis: Optimization of Digital Circuit Propagation Times Using Genetic Algorithms.

## Technical Skills

### Languages:

- Mostly used: Python, Typescript, Java.
- Also familiar with: C, C++, SQL.

### Web Development Technologies:

- Back-end: Spring Boot, Django, FastAPI, JHipster.
- Front-end: Angular, Vue.js, Tailwind, Bootstrap.

### ML & AI:

- LLMs & NLP: Practical experience with large language models, text extraction, and information retrieval.
- Academic experience with various AI/ML and data science techniques, including neural networks (CNNs, RNNs, transformers), regression, clustering, dimensionality reduction, and optimization methods.
- Libraries & Tools: PyTorch (basic), TensorFlow, Scikit-Learn, Llamacpp, Langchain.

**Other Tools:** Docker, Git, REST APIs.

## Academic Projects

### Image Classification with CNNs

- Developed convolutional and recurrent neural networks as part of two academic projects in a Deep Learning course. Focused on design and training of neural networks and on exploring and applying some deep learning techniques to grasp the basics of neural networks (e.g. data augmentation, transfer learning, fine-tuning, learning rate scheduling, weight initialization).

### Caption-Image Matching with Transformers

- Reimplemented the CLIP model for medical image-caption matching to understand model architecture and functionality.

### Online Learning for Pricing in E-commerce

- Explored online learning techniques to optimize dynamic pricing models in simulated e-commerce scenarios.

## Publications

- Medical Information Extraction with Large Language Models (<https://aclanthology.org/2024.icnlp-1.47/>)  
Authors: **Raffaello Fornasiere**, Nicolò Brunello, Vincenzo Scotti, Mark Carman.

## Other Experiences

### ML4Good Bootcamp

- Completed EPFL's iteration of the ML4Good AI Safety and ML Bootcamp (February 2023).