Raffaello Fornasiere

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Summary

I am a software engineer with practical experience in LLM integration and AI agent development. I have built AI-powered applications in healthcare and research contexts, working across the full stack. My background combines AI/ML knowledge with hands-on development skills to deliver production-ready solutions.

Professional Experience

AI Agent Developer, Freelance for William Saunders, Alignment Science Researcher at Anthropic (May 2025 - Present)

- Building a proactive personal assistant that can autonomously initiate conversations and manage tasks.
- Implementing tool integrations (e.g. Google APIs), plus custom note-taking systems.
- Tech stack: FastAPI, React, Claude API, RAG, event-driven architecture, and various third-party APIs.

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

- Prototyped AI healthcare applications using LLMs, exploring feasibility for medical report automation (related to my thesis work).
- Designed, built and maintained user interfaces using Angular, ensuring seamless integration with JHipster framework.
- Developed reusable JHipster framework extensions (e.g. an extended JHipster Criteria API, a custom Spring Data JPA repository for bidirectional relationship synchronization).
- Lead the development of different products.
- Mentored two junior developers and promoted best practices to improve code quality.

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.
- Optimized database performance through SQL query refactors, reducing 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 integrating LLMs for medical information extraction, **tested in three Italian hospitals**.
- Published research: "Medical Information Extraction with Large Language Models" (ACL 2024).

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

AI/ML & LLM Integration:

- Production experience with LLM APIs (OpenAI, Anthropic Claude), and prompt engineering.
- Experience with local/lightweight models (with llamacpp) for privacy-sensitive applications.
- Agent development: Autonomous systems, tool integrations, streaming responses and conversational interfaces.
- NLP: Text extraction, information retrieval, medical language processing.
- Libraries: LangChain, llamacpp, Hugging Face Transformers, TensorFlow.
- Academic background in neural networks (CNNs, RNNs, transformers), optimization methods.

Languages:

- Primary: TypeScript/JavaScript, Python, Java.
- Also experienced with: C++, SQL.
- Others: CSS, HTML.

Frameworks, Libraries and Tools:

- Back-end: FastAPI, Django, Spring Boot, JHipster.
- Front-end: React, Vue.js, Angular.
- Others: Docker, Git, Tailwind CSS, Streamlit, Spring Data JPA, Postgres/PostgreSQL, SQLite.

Publications

Medical Information Extraction with Large Language Models
Published at ICNLSP-2024, ACL Anthology (A ranked by CORE, 20-25% acceptance rate)*
`https://aclanthology.org/2024.icnlsp-1.47/`

- Authors: **Raffaello Fornasiere**, Nicolò Brunello, Vincenzo Scotti, Mark Carman.

Academic Projects

Medical Image-Caption Matching with Transformers

- Reimplemented CLIP model from scratch for medical radiology applications using ResNet vision encoder and custom transformer text encoder.
- Trained and fine-tuned both models using contrastive learning, pre-trained BERT integration, caption preprocessing, and medical concept augmentation techniques.
- Developed evaluation methods for assessing image-caption alignment in medical domain.

Online Learning for Dynamic Pricing in E-commerce

- Exploration work implementing multi-armed bandit algorithms (GP-TS, GP-UCB) with social influence modeling to optimize advertising budget allocation across product campaigns.

Deep Learning Projects with CNNs

- **Species Classification:** Implemented transfer learning with VGG16/19 and EfficientNet models, applying data augmentation techniques (CutMix, MixUp) and ensemble methods to achieve 86.91% accuracy on image classification tasks.
- **Time Series Classification:** Developed CNN-LSTM hybrid architectures for sequential data analysis, experimenting with preprocessing techniques including normalization and noise augmentation to reach 70% classification accuracy.

Other Experiences

ML4Good AI Safety Bootcamp

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

Community Involvement

Volunteer developer for hometown community

- Built website to publish local competition status with real-time updates through Telegram bot.
- Developed web application to emulate Italian TV game show, managing multiplayer gameplay across mobile devices.