

Francesco La Rosa

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Education

The University of Edinburgh

2022–2026

BSc Artificial Intelligence and Computer Science (Informatics)

Current average: 82.2% (First-Class trajectory)

Selected completed coursework:

- Introduction to Algorithms and Data Structures (84%)
- Reasoning and Agents (83%)

École Polytechnique Fédérale de Lausanne (EPFL)

Sept 2024–July 2025

Exchange Year, Artificial Intelligence and Computer Science

GPA: 5.5/6.0

Master-level coursework (final grades /6):

- Introduction to Natural Language Processing — 5.25/6
- Large-scale Data Science for Real-world Data — 5.5/6
- Research Project — 6/6

Research

Investigation on the Effect of Grammar on the Arrow of Time Using Large Language Models (2025).
Technical report; code and materials in repository.

Projects

Syntactic Arrow of Time in Language Models

Feb 2025–Jun 2025

- Trained 20+ Transformer LMs (Nano→GPT-1, ~0.1M–110M params) on POS-tag sequences for English, German, Finnish, and Italian; compared forward vs. backward modeling.
- Evaluated two tokenization schemes (unique POS IDs vs. random ID ranges); found no measurable Arrow-of-Time on syntax-only data (e.g., GPT-1 ID $\Delta \approx +0.03\%$ cross-entropy).
- [GitHub repository](#)

SamplerBench

Jun 2025–Aug 2025

- Benchmarks five sampling methods with controlled samples; multi-judge evaluation for creative writing and an MMLU-Pro subset for objective accuracy.
- Local inference via a llama.cpp-compatible backend; interactive dashboard and visualizer for temperature, top- p , top- k , min- p , and top- $n\sigma$.
- [Project site](#) [GitHub repository](#)

Dialogia

Jun 2025–Present

- Privacy-focused AI chat platform with local-first storage and multi-model support.
- Tutor features: interactive MCQ quizzes (JSON schema and tool calls), Socratic prompts, editable memory.
- [GitHub repository](#)

Leadership & Service

Resident Assistant, University of Edinburgh (2025–)

First point of contact for residents; duty coverage and incident response; triaged welfare concerns and escalated per policy; mediated conflicts; coordinated with Residence Life and security.

Certifications

Machine Learning; Mathematics for Machine Learning and Data Science (Stanford / DeepLearning.AI)

Skills & Languages

Programming: Python, TypeScript/JavaScript, Java

ML: PyTorch, Transformers, evaluation pipelines

Web/Tools: Next.js, React, Git, Jupyter

Languages: English (C1), Italian (native), French (B1)