Francesca Fati

Researcher in Biomedical Engineering

Milan, Lombardy, IT

Currently based in Rochester, MN, USA

October 27th 1997

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About Me

I am a passionate and dedicated researcher in Biomedical Engineering, currently working on explainable AI for Ovarian Cancer treatment. I consider myself smiling, respectful, ambitious, and a fast learner. Outside research, I enjoy sports and traveling, always seeking fast-paced experiences.

Working Experience

Research Fellowship | **Mayo Clinic** *Sept 2025 – Present*
AI, Division of Radiology Informatics, Department of Radiology *Rochester, MN, US*

Currently developing AI models to segment adnexal masses from ultrasound cine clips and classify them as benign or malignant. In parallel, working on predictive models of clinical outcomes using CT imaging and clinical data from patients with advanced ovarian cancer.
Supervisor: Prof. Timothy Kline

Research Collaborator | **European Institute of Oncology** *Nov 2023 – Present*
Division of Surgical Gynecology *Milan, IT*

Lead researcher in Under-XAI and PREDICT, developing explainable AI models to predict clinical outcomes in advanced ovarian cancer. Oversaw project development and management, coordinating collaboration within multidisciplinary teams.
Under-XAI: *https://nearlab.polimi.it/underxai/* | *Project code: PNRR-MAD-2022-12376574*
PREDICT: *https://nearlab.polimi.it/predict/*
PIs: Prof. Elena De Momi, Dr. Francesco Multinu

Teaching Assistant | **Polytechnic of Milan** *Jan 2024 – Present*
Department of Electronics, Information and Bioengineering *Milan, IT*

Supported teaching activities for the Smart Hospitals (057492) course, introducing students to foundational AI-based diagnostic and therapeutic technologies applicable in clinical environments.

Science Communicator | **Polytechnic of Milan** *Jan 2024 – Jun 2025*
Department of Electronics, Information and Bioengineering *Milan, IT*

Lecturer for the course *Understanding Artificial Intelligence* for high school students to core AI concepts and supporting them in exploring future university pathways.

Research Internship | **Polytechnic of Milan** *Jun 2023 – Oct 2023*
Department of Electronics, Information and Bioengineering *Milan, IT*

Preliminary research on AI models to predict tumor resectability using CT scans for ovarian cancer.

Academic Background

PhD in Bioengineering | Polytechnic of Milan *Sept 2023 – Present*
Department of Electronics, Information and Bioengineering *Milan, IT*

Research Topic: Precision Oncology. My work focuses on adapting and integrating advanced representation-learning methods to address concrete clinical needs. Close collaboration with clinicians through the UnderXAI and PREDICT projects | Supervisor: Prof. Elena De Momi

MSc in Biomedical Engineering | Polytechnic of Milan *Sep 2020 – May 2023*
110/110 cum laude *Milan, IT*

Thesis: *Hybrid Model for a Tendon-Driven Steerable Catheter for Minimally Invasive Mitral Valve Repair.* Developed within the EU Artery project, the thesis focused on designing a hybrid analytical-deep learning model to support the automation of the MitraClip device | Supervisor: Prof. Elena De Momi

BSc in Biomedical Engineering | University of Genoa *Sep 2016 – Oct 2019*
110/110 *Genoa, IT*

Thesis: *Algorithm for Clustering Analysis in Neural Networks* | Supervisor: Prof. Marco Storace

Publications

Deep Learning for Decision Support in Ovarian Cancer Treatment Planning
Peer Review | npj Women's Health — F. Fati et al.
https://doi.org/10.21203/rs.3.rs-7434368/v1

Vision Transformers for Preoperative CT-Based Prediction of Histopathologic Chemotherapy Response Score in High-Grade Serous Ovarian Carcinoma
Peer Review | IJCARS 2026 — F. Fati et al.

A Feasibility Study on the Usage of Vision Transformers for Predicting Tumor Resectability
CARS 2025 — F. Fati et al.
https://hdl.handle.net/11311/1288425

Deep Learning-Based Tumor Resectability Prediction in Ovarian Cancer
Ital-IA 2024 — F. Fati et al.
https://hdl.handle.net/11311/1267309

Optimizing Heart Valve Surgery with Model-Free Catheter Control
Hamlyn Symposium 2023 — A. Bicchi, F. Fati et al.
https://hdl.handle.net/11311/1251320

Reproducing a Decision-Making Network in a Virtual Visual Discrimination Task
Frontiers in Integrative Neuroscience 2022 — A. Trapani, .. , F. Fati et al.
https://hdl.handle.net/11311/1227444

Award & Achievements

Zegna Foundation
Awarded the Ermenegildo Zegna scholarship ($ 10,000) to support of the research program at Mayo Clinic for the 2025/2026 academic year.

PREDICT
Project funded by FRRB (Milan, IT) with € 1,800,000. Contributed significantly to the project concept and to the proposal's writing, administration, and coordination. The project focuses on predicting tumor evolution and progression through generative models, using diagnostic CT scans to ultimately estimate chemotherapy sensitivity. Project partners: European Institute of Oncology, Polytechnic of Milan, University of Insubria. *PREDICT*: *https://nearlab.polimi.it/predict/*

Cariplo Foundation
Project funded by Fondazione Cariplo with €200,000. Major contributor to the proposal's writing, administration, and coordination. The project uses AI and in-silico modeling to harmonize clinical data, simulate under-represented populations, and make clinical trials more inclusive and generalizable.

Skills

MedView
Developer of MedView, a Visual Studio Code extension for viewing and exploring NIfTI (.nii) and DICOM (.dcm) files directly within the editor. Designed to streamline medical-imaging workflows for researchers and developers.
Available on the VS Code Marketplace: https://lnkd.in/dMg6YRM5 | *Developed with Alberto Rota.*

RapidReview
Developer of RapidReview, a tool for fast and flexible inspection and annotation of medical-imaging datasets. Designed to facilitate efficient data curation.
GitHub: https://github.com/FrancescaFati

Programming: Python, C++, C, MATLAB, Git, JavaScript
AI & ML: PyTorch, TensorFlow, Keras, SciKit-Learn, WandB, Google Cloud
Engineering Tools: ROS
Hardware: Microcontrollers
Office: LaTeX, Microsoft Office Suite
Languages: Italian (native), English (TOEIC B2)

International Experience

Research Fellowship, Mayo Clinic, Rochester, MN, USA — *Sep 2025 – Present*
Au Pair, St Albans, London, UK — *Jan 2020 – Jun 2020*
Intensive English Course with Homestay, Edinburgh, UK — *Sept 2018 – Oct 2018*

Hobbies & Interests

Tennis (10+ years competitive) • Running (Half Marathon, 2018) • Travel (road trips camping across Europe) • Surfing • Skiing

This CV was last updated on February 25th 2026.
I authorize the processing of personal data according to EU Regulation 679/2016.