

Giovanni Visonà

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Current Position

Biomedical AI/ML Engineer

Heidelberg, Germany

GSK.ai

2024 – Ongoing

- Research and development of state-of-the-art ML models to optimize performance on a range of biomedical prediction tasks.
- Consistently placed top 3 in my department for both code contributions and code reviews in the past 4 quarters.
- Implemented bespoke support tools to enhance job scheduling and experiment analysis for my team.
- Contributed to establishing more extensive process documentation for internal workflows.
- Liaised with experts in biology, medicine, and experimentation to ensure optimal collection of data to train biomedical ML models.
- Secure handling of sensitive data.

Experience

ESR Researcher in Machine Learning for Precision Medicine

Tübingen, Germany

Max Planck Institute for Intelligent Systems

2019 – 2024

- Designed and implemented deep-learning-based models and probabilistic models to solve problems in biology and biomedicine.
- ESR in the Marie Curie Innovative Training Network entitled “Machine Learning Frontiers in Precision Medicine”
- Gained expertise with several types of biological data, including sequencing data, proteomics, mass spectra, clinical records, molecular networks, chemical structures.
- Published as first author or shared first author in internationally renowned journals, including Nature Communications, Bioinformatics, and Briefings in Bioinformatics.
- Gained mentoring experience, helping supervise Master students. Part of the MAXMINDS mentoring network to help disadvantaged students affected by the 2023 earthquake in Türkiye and Syria.

Junior Developer and Consultant

Padova, Italy

Espedia Consulting - Ethica Group

2016 – 2018

- Contributed to the creation of customized software solutions for clients, prioritizing robustness in design, and ensuring on-time delivery.
- Applied object-oriented principles and design patterns to create scalable and maintainable code in Python and JavaScript.
- Developed presentations and proposals by synthesizing data and insights into actionable recommendations.

Education

University of Tübingen

2019 – 2024 (PhD)

PhD in Computer Science

Defense Scheduled)

- Thesis: “Biomedical Machine Learning Beyond the Training Distribution”. Supervisors: Prof. Bernhard Schölkopf and Dr. Gabriele Schweikert.
- PhD defense scheduled for 29.10.2025

University of Edinburgh

2018 - 2019

MSc in Artificial Intelligence

- Graduated with Distinction.
- Thesis: “Optimising Recommendation Slates Using Deep Determinantal Point Processes”. Supervisors: Dr. Roberto Pellegrini and Aleksandr Petrov.

University of Trento
Master's Degree in Physics

2014 – 2016

- Graduated with 110/110 marks with honours.
- Thesis: "Polymer Templating of Porous Silicon for Drug Delivery Applications". Supervisor: Dr. Paolo Bettotti.

Università di Torino
Bachelor's Degree in Physics

2012 – 2014

- Graduated with 110/110 marks with honours.
- Thesis: "Modelization of Nano Amplified Targeted Therapy (nATT)". Supervisor: Prof. Cristiana Peroni
Collaborator: Dr. Andrea Attili.

Publications

Network propagation for GWAS analysis: a practical guide to leveraging molecular networks for disease gene discovery	2024
<i>Briefings in Bioinformatics</i> , DOI: 10.1093/bib/bbae014	
Multimodal learning in clinical proteomics: enhancing antimicrobial resistance prediction models with chemical information	2023
<i>Bioinformatics</i> , DOI: 10.1093/bioinformatics/btad717	
A historical perspective of biomedical explainable AI research	2023
<i>Patterns</i> , DOI: 10.1016/j.patter.2023.100830	
Getting personal with epigenetics: towards individual-specific epigenomic imputation with machine learning	2023
<i>Nature Communications</i> , DOI: 10.1038/s41467-023-40211-2	
Machine-Learning-Aided Prediction of Brain Metastases Development in Non-Small-Cell Lung Cancers	2023
<i>Clinical Lung Cancer</i> , DOI: 10.1016/j.clcc.2023.08.002	
Targeted dose enhancement in radiotherapy for breast cancer using gold nanoparticles, part 2: a treatment planning study	2017
<i>Medical Physics</i> , DOI: 10.1002/mp.12178	
Targeted dose enhancement in radiotherapy for breast cancer using gold nanoparticles, part 1: A radiobiological model study	2017
<i>Medical Physics</i> , DOI: 10.1002/mp.12180	

Technologies

Languages: Python, R, Go, SQL

Tools: Pytorch, Pandas, Polars, Ibis, FastAPI, Scikit-learn, SQLite, HDF5, Git, Github, Docker, Kubernetes (CKAD-certified), Spark, Airflow

Other: CI/CD (Azure, Github Actions), Cloud Computing (GCP)

Scientific Expertise

Machine learning and Data Science: Deep Learning, Reinforcement Learning, Classical ML (GLMs, Trees, GAMs, etc.), Diffusion Models, EDA, Data Visualization, Interpretable ML, Graph ML, Data Modelling

Probability and Statistics: Hypothesis testing, A/B testing, Linear Algebra

Biology and Medicine: Epigenetics, Genomics, Proteins, Pathways, Immunology, Small Molecules, Molecular Dynamics, Clinical Data (EHRs), Antimicrobial Resistance, Mass Spectrometry