

Federico Ravenda

EDUCATION

Università della Svizzera italiana (USI)

PhD in Computer Science

Lugano, Switzerland

Mar. 2023 – Present

Universitat Pompeu Fabra (UPF)

Visiting Research Fellow, Department of Translation and Language Sciences

Barcelona, Spain

Jun. 2026 – Nov. 2026

National Institute of Informatics (NII)

Visiting Research Fellow, Computer Science

Tokyo, Japan

Sep. 2024 – Dec. 2024

Milano-Bicocca University

Master's degree in Statistics – Data Science Track, Final Grade: 110 cum Laude/110

Milan, Italy

Sep. 2020 – Jan. 2023

- **Thesis Title:** Forecasting Spatio-Temporal Data with Bayesian Neural Networks

Universidad Carlos III de Madrid

Exchange Student in Statistics

Madrid, Spain

Aug. 2019 – Feb. 2020

Milano-Bicocca University

Bachelor's degree in Statistics – Information Systems Track, Final Grade: 110 cum Laude/110

Milan, Italy

Sep. 2017 – Sep. 2020

- **Thesis Title:** Machine Learning Techniques for Automatically Processing Malware Logs

RESEARCH EXPERIENCE

Fondazione Ticino Cuore

Research Fellow

Lugano, Switzerland

Mar. 2023 – Aug. 2024

- Developed Bayesian, Machine and Deep Learning models to predict Out-Of-Hospital Cardiac Arrest rates and occurrences at municipality level in Ticino region.

Milano-Bicocca University

Research Fellow

Milan, Italy

Apr. 2022 – Jun. 2022

- Worked on scenario-tree generation via Bayesian Optimization in Multistage Stochastic Optimization problems.

Milano-Bicocca University

Research Fellow

Milan, Italy

Dec. 2021 – Apr. 2022

- Worked as research fellow in the Statistics department. In particular, I developed Bayesian Models to estimate and predict the risk of contagion by COVID-19.

Milano-Bicocca University & SUPSI University

Research Fellow

Milan, Italy & Lugano, Switzerland

Jan. 2020 – Sep. 2021

- Developed supervised machine learning algorithms to identify intruding-malware-families from shell-history-log of Unix systems.

TEACHING EXPERIENCE

Università della Svizzera italiana

Teaching Assistant

Lugano, Switzerland

2023 – 2026

- Natural Language Processing (Fall 2025)
- Introduction to Bayesian Computing (Spring 2023, 2024, 2025)
- Information Retrieval (Fall 2023)

Milano-Bicocca University

Teaching Assistant

Milan, Italy

2021 – 2023

- Probability & Statistical Inference (Spring 2023)
- Introduction to Python programming (Spring 2022)
- Introduction to Databases (Fall 2021)
- Introduction to R programming (Spring 2021)

FELLOWSHIPS & AWARDS

Doctoral Mobility grant

Jun 2026

Grant of ~ 10'000 chf to spend a visiting period of 6 months at Universitat Pompeu Fabra (UPF) in Barcelona, Spain

NII International Internship Program

Sep 2024-Dec 2024

Grant to Spend a visiting period of 4 months at National Institute of Informatics (NII) in Tokyo, Japan

ESSIR 2023 grant

Jun. 2023

European Summer School on Information Retrieval, Wien, Austria

Generali Italia Data Challenge 2021

Nov. 2021

Winner

SKILLS & LANGUAGES

Programming: R, Python, Julia, SQL

Languages: English (Fluent), Spanish (Fluent), Italian (Native)

SUPERVISION

Co-supervision of four brilliant Msc students.

ACTIVITIES

Member of the organizing committee for [Satellite workshop to International Society for Bayesian Analysis \(ISBA\) world meeting](#)

REFERENCES

- [1] Federico Ravenda et al. “PersonalityDBench: A Dataset for Personality Disorders - from Modeling to Controlled Generation”. In: **Accepted as Main Paper at ACL 🏰2026!** Ed. by Maria Liakata et al. San Diego, California, United States: Association for Computational Linguistics, July 2026, pp. 30239–30259. ISBN: 979-8-89176-390-6. DOI: 10.18653/v1/2026.acl-long.1395. URL: <https://aclanthology.org/2026.acl-long.1395/>.
- [2] Federico Ravenda et al. “Are LLMs effective psychological assessors? Leveraging adaptive RAG for interpretable mental health screening through psychometric practice”. In: **Accepted as Main Paper at ACL 🏰2025!** Ed. by Wanxiang Che et al. Vienna, Austria: Association for Computational Linguistics, July 2025, pp. 8975–8991. ISBN: 979-8-89176-251-0. URL: <https://aclanthology.org/2025.acl-long.440/>.
- [3] Federico Ravenda et al. “TONY: an open-source TOLkit for Nlp in psYchology”. In: **Accepted at ACL 🏰2026!** Ed. by Greg Durrett and Ping Jian. San Diego, California, United States: Association for Computational Linguistics, July 2026, pp. 660–671. ISBN: 979-8-89176-392-0. DOI: 10.18653/v1/2026.acl-demo.65. URL: <https://aclanthology.org/2026.acl-demo.65/>.
- [4] Samuele Vallisa* et al. “The Changing Geometry of Grammar: Dimensionality and Neighborhood Reorganization across Transformer Layers”. In: *arXiv preprint arXiv:2608.25166* (2026).
- [5] Federico Ravenda et al. “From Evidence Mining to Meta-Prediction: a Gradient of Methodologies for Task-Specific Challenges in Psychological Assessment”. In: *CLPsych@NAACL 2025*, pp. 242–248.
- [6] Federico Ravenda et al. “P2p-from posts to patterns: An llm ensemble approach to mental health dynamics detection”. In: *Proceedings of the 10th Workshop on Computational Linguistics and Clinical Psychology (CLPsych 2026)*. 2026, pp. 498–503.
- [7] Federico Ravenda et al. “Rethinking psychometrics through LLMs: how item semantics shape measurement and prediction in psychological questionnaires”. In: *Nature Scientific Reports* 15.1 (2025), p. 37313.
- [8] Antonio Di Noia*, Federico Ravenda*, and Antonietta Mira. “A general framework for adaptive nonparametric dimensionality reduction”. In: *Nature Scientific Reports* (2026).
- [9] Federico Ravenda et al. “Tailoring Adaptive-Zero-Shot Retrieval and Probabilistic Modelling for Psychometric Data”. In: *The 40th ACM/SIGAPP Symposium on Applied Computing (SAC '25)* (2025). DOI: 10.1145/3672608.3707922.

- [10] Federico Ravenda et al. “Navigating through the hidden psycho-semantic space: steering LLMs to improve mental health assessment”. In: *Accepted to SAC 2026*.
- [11] Federico Ravenda et al. “A probabilistic spatio-temporal neural network to forecast COVID-19 counts”. In: *International Journal of Data Science and Analytics* (2024), pp. 1–8.
- [12] Federico Ravenda et al. “A self-supervised seed-driven approach to topic modelling and clustering”. In: *Journal of Intelligent Information Systems* (2024), pp. 1–21.
- [13] Alessandro De Grandi*, Federico Ravenda*, and et al. “The Emotional Spectrum of LLMs: Leveraging Empathy and Emotion-Based Markers for Mental Health Support”. In: *CLPsych@NAACL 2025* ().
- [14] Lili Lu et al. “Towards Exploring Mixed-Initiative Conversation Generation Based on Community Question Answering”. In: *Accepted at Transactions on Information Systems (TOIS)*. 2026.
- [15] Lili Lu et al. “Zero-Shot and Efficient Clarification Need Prediction”. In: *European Conference of Information Retrieval, ECIR 2025* (2025).
- [16] Andrea Raballo, Federico Ravenda, and Antonietta Mira. “Diagnosing schizophrenia spectrum disorders: Large language models (LLMs) vs. leading international psychiatrists (LIPs)”. In: *Psychiatry and Clinical Neurosciences* (2025).
- [17] Angelo Auricchio et al. “Spatio-temporal distribution, prediction and relationship of three major acute cardiovascular events: Out-of-hospital cardiac arrest, ST-elevation myocardial infarction and stroke”. In: *Resuscitation Plus* 20 (2024), p. 100810.
- [18] Anna Baczowska et al. “Opinionated texts in social media: A proposal for evaluative judgement methodology”. In: *Beyond Philology An International Journal of Linguistics, Literary Studies and English Language Teaching* 21/1 (June 2024), pp. 203–280. DOI: 10.26881/bp.2024.1.07. URL: <https://czasopisma.bg.ug.edu.pl/index.php/beyond/article/view/11531>.
- [19] Federico Ravenda et al. “Incremental Mixture of Normalizing Flows for Dynamic Topic Modelling.” In: *IIR*. 2023, pp. 18–23.

federico.ravenda@usi.ch | [LinkedIn](#)