Maria Federica Norelli

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Academic Positions

Visiting Researcher (forthcoming), Munich Center for Mathematical Philosophy (LMU Munich), Nov–Dec 2025 (forthcoming), Munich. Forthcoming research visit to collaborate on topics in the epistemology of machine learning and AI-driven science.

Research Assistant, Northeastern University London — "Reverse Engineering Prompts" (PI: Prof. Ioannis Votsis), Apr 2025–present, London. Contributing to the analysis of large-scale online data using APIs and natural language processing techniques to investigate how human programmers' responses inform the design of high-quality prompts.

Seminar Leader, Northeastern University London — LPHIL4228 *Introduction to Logic*, Jan–Apr 2025, London. Taught undergraduate seminars in propositional and predicate logic, designed exercises, and integrated digital tools for assessment.

Research Assistant, Northeastern University London — "Human and Network Sciences: Graph Computing for the Humanities and Social Sciences" (PI: Prof. Brian Ball), Apr–Dec 2024, London. Developed code to model the evolution of beliefs in simulated temporal networks, applying graph-theoretical methods for epistemic modeling and cross-disciplinary research.

Research Assistant (Psychophysics), Northeastern University London — "Cones to Words: Augmenting Color Communication in Context", Oct 2021–Mar 2023, London. Conducted experimental and online studies on colour naming and perception, managed data collection, and assisted with analysis and reporting.

Education

PhD in Philosophy (in progress, expected Jul 2026), Northeastern University London. Primary Supervisor: Prof. Ioannis Votsis; Secondary Supervisors: Prof. Jon Williamson (Apr 2023–Dec 2024); Prof. Rogério de Lemos (Jan 2025–). Dissertation: *Scientific AI and the Epistemology of Machine Learning.*

MA in Philosophy and Artificial Intelligence, Northeastern University London, Sep 2022 — First-Class Honours. Dissertation: *Predicting Without Explaining? An Epistemological Investigation of Deep Learning Systems.*

MA in Semiotics, University of Bologna, Mar 2019 — *summa cum laude*. Dissertation: *Less is More? On Ockham's Razor as a Theoretical Criterion.*

BA in Philosophy, University of Bologna, Nov 2016 — *summa cum laude*. Dissertation: *The Evolution of Wittgenstein's Thought from the Tractatus to the Philosophical Investigations.*

Awards

WD Wright Award (2023). PSA Travel Grant (2024). EPSA Travel Grant (2025).

Publications

Norelli, M. F., Votsis, I., & Williamson, J. (2025). "The Interplay of Data, Models, and Theories in Machine Learning." *Philosophy of Science*, 1–16. https://doi.org/10.1017/psa.2025.10161

Norelli, M. F. (2023). "The Use of Colour Names Over Repeated Trials." *Color and Colorimetry. Multidisciplinary Contributions*, Vol. XVIII A. https://www.rcasb.eu/...

Talks and Workshops

Sparsity, Generalization, and Winning Tickets of Deep Neural Networks: The Noise Cancelling Razor of Machine Learning, EPSA, Groningen (Netherlands), Aug 2025 — Speaker.

Amplifying Humanities Research with AI and Network Science Methods, NU London, May 2025 — Speaker.

The Interplay of Data, Phenomena, and Models, PSA, New Orleans (USA), Nov 2024 — Speaker.

Human and Network Sciences Bootcamp, NU London, Oct 2024 — Speaker. *AI in Action Bootcamp*, NU London, May 2024 — Speaker.

Data, Phenomena, and Models in Machine Learning, Society for the Philosophy of AI, Erlangen (Germany), Dec 2023 — Poster Presenter.

The Use of Colour Names Over Repeated Trials, Gruppo del Colore Conference, Lecco (Italy), Sept 2023 — Speaker.

Cultural Differences in the Cognitive Aspects of Colour Geometry, Wittgenstein and AI, British Wittgenstein Society Conference, London, July 2022 — Speaker.

Democrazia e Opinione Pubblica. Cos'è la Post-Verità?, Dialoghi Etici, Contursi Terme (Italy), Apr 2021 — Speaker.

Training and Certifications

Digital Marketing and Communication, Bologna Business School (July 2018).

Introduction to Research Integrity, UK Research Integrity Office (Spring 2024).

Evidence-Based Postsecondary Teaching, Northeastern University (Summer 2024).

Integrating Teaching Across Contexts, Northeastern University (Fall 2024).

Associate Fellowship of the Higher Education Academy (AFHEA), Advance HE (Fall 2025)

Additional Skills

Languages: Italian (native), English (fluent), German (beginner).

Technical: Python (machine learning experiments), LaTeX, Git, HPC clusters (SLURM), computational reproducibility practices.

References

Prof. Ioannis Votsis — Professor of Philosophy, Northeastern University London — ioannis.votsis@nulondon.ac.uk.

Prof. Jon Williamson — Samuel Hall Chair of Philosophy, University of Manchester — j.williamson@kent.ac.uk.

Dr. Rogério de Lemos — Senior Lecturer in Computer Science, University of Kent — r.delemos@kent.ac.uk.

Prof. Brian Ball — Professor in Philosophy, Northeastern University London — brian.ball@nulondon.ac.uk.