

Emanuele La Malfa

personal page

Work Experience

Post Doctoral Researcher

Benchmarking Large Language Models.

Jul. 2023 – Current
The Alan Turing Institute & University of Oxford, UK

- Principal Investigators: Prof. [Michael Wooldridge](#), [Nigel Shadbolt](#), and [Anthony Cohn](#).

Research Assistant

Enabling rapid adoption of artificial intelligence through an anonymized data protocol and explainable models.

Oct. 2019 – Mar. 2021
University of Oxford, UK

- Principal Investigator: Prof. [Marta Kwiatkowska](#).
- Collaboration with [GenieAI](#) and funded through the [InnovateUK](#) scheme.
- The collaboration led to a paper published at [EMNLP'20](#).

Consultant

IBM, Global Business Unit

Mar. 2018 – Aug. 2019
IBM, Milan, Italy

- Design, development, and deploy of a search engine for a public financial institution.
- Design, development, and deploy of a cloud document management system for a public financial institution.

Education

University of Oxford

PhD (DPhil) in Computer Science, supervised by Prof. [Marta Kwiatkowska](#).

Oct. 2019 – Nov. 2023
Oxford, UK

Polytechnic University of Milan

Master's Degree in Computer Science and Engineering.

Feb. 2015 – Sept. 2017
Milan, Italy

Polytechnic University of Milan

Bachelor's Degree in Computer Engineering.

Sept. 2011 – Sept. 2014
Milan, Italy

Publications

NLP and Linguistics

[Code Simulation Challenges for Large Language Models](#)

Pre-print (long paper)

Emanuele La Malfa, Christoph Weinhuber, Orazio Torre, Fangru Lin, Anthony Cohn, Nigel Shadbolt and Michael Wooldridge

[Language-Models-as-a-Service: Overview of a New Paradigm and its Challenges](#)

Pre-print (long paper) - media coverage [here](#) and [here](#)

Emanuele La Malfa, Aleks Petrov, Frieder Simon, Christoph Weinhuber, Raza Nazar, Anthony Cohn, Nigel Shadbolt and Michael Wooldridge

[Language Models Tokenizers Introduce Unfairness Between Languages](#)

NeurIPS'23 (long paper, main track) - [website](#)

Aleksandar Petrov, **Emanuele La Malfa**, Philip Torr, Adel Bibi

[Emergent Linguistic Structures in Neural Networks are Fragile](#)

Working paper (long paper)

Emanuele La Malfa, Matthew Wicker, Marta Kwiatkowska

[The King is Naked: on the Notion of Robustness for Natural Language Processing](#)

AAAI'22 (long paper, main track) – **oral presentation** –

Emanuele La Malfa, Marta Kwiatkowska

[On Guaranteed Optimal Robust Explanations for NLP Models](#)

IJCAI'21 (long paper, main track)

Emanuele La Malfa, Rhiannon Michelmores, Agnieszka Zbrzeny, Nicola Paoletti, Marta Kwiatkowska

[Assessing Robustness of Text Classification through Maximal Safe Radius Computation](#)

EMNLP'20 (long paper)

Emanuele La Malfa, Min Wu, Luca Laurenti, Benjie Wang, Anthony Hartshorn, Marta Kwiatkowska

Complex Networks Theory and Deep Learning

[Deep Neural Networks as Complex Networks](#)

Pre-print (long paper)

Emanuele La Malfa, Gabriele La Malfa, Claudio Caprioli, Giuseppe Nicosia, Vito Latora

[Characterizing Learning Dynamics of Deep Neural Networks via Complex Networks](#)

IEEE-ICTAI'21 (long paper, main track)

Emanuele La Malfa, Gabriele La Malfa, Giuseppe Nicosia, Vito Latora

Teaching Experience

Deep Learning in Healthcare	2024 (HT)
<i>Practical sessions</i>	<i>University of Oxford, UK</i>
Machine Learning	2023 (MT)
<i>Classes</i>	<i>University of Oxford, UK</i>
Probabilistic Model Checking	2023 (MT)
<i>Practical sessions</i>	<i>University of Oxford, UK</i>
Ethical Computing in Practice	2023 (HT)
<i>Practical sessions</i>	<i>University of Oxford, UK</i>
Deep Learning in Healthcare	2023 (HT)
<i>Practical sessions</i>	<i>University of Oxford, UK</i>
Probabilistic Model Checking	2022 (MT)
<i>Practical sessions</i>	<i>University of Oxford, UK</i>
Machine Learning	2021 (MT)
<i>Classes</i>	<i>University of Oxford, UK</i>
Probabilistic Model Checking	2021 (MT)
<i>Practical sessions</i>	<i>University of Oxford, UK</i>
Fundamentals of Computer Science	2016 (Oct.-Dec.)
<i>Practical sessions</i>	<i>Polytechnic University of Milan, Italy</i>

Conferences and Workshops Organization

Benchmarking Large Language Models	28/11/2023
<i>Workshop Organizer</i>	<i>The Alan Turing Institute, London, UK</i>
LOD2020, LOD2021, LOD2022, LOD2023	
<i>Conference Chair</i>	<i>Lake District/Siena</i>

Invited Lectures, Talks, and Presentations

On Robustness for Natural Language Processing	19/04/2023
<i>Group Talk</i>	<i>ICREA, Barcelona</i>
On the Notion of Robustness for Natural Language Processing	17/01/2023
<i>Departmental Talk</i>	<i>King's College University of London, UK</i>
Robustness for Natural Language Processing	22/04/2022
<i>Lecture – Deep Fridays</i>	<i>University of Bologna, Italy</i>
Explainable AI	04/03/2022
<i>Lecture – Advanced Artificial Intelligence Course</i>	<i>Royal Holloway University of London, UK</i>

Tutoring and Mentoring

Williams-Exeter Exchange Programme	2023-2024
<i>Tutoring Saad Waheed and Alisa Kanganis, (Williams-Exeter Programme exchange students in machine learning).</i>	
University of Oxford	2022
<i>Tutoring Edward Kusel and Aleksandar Radoslavov for their part-B projects (undergraduate in Computer Science).</i>	
Lead the Future - Mentor	2022-current
<i>Lead the Future is a nonprofit organization that helps Italian talents in STEM disciplines to find their path to brilliant careers.</i>	

Academic Reviewing and Volunteering

The Alan Turing Institute - Reviewer	October - December 2023
<i>Reviewers for the Turing Fellow Program - Panel "Fundamental Research in Data Science and AI"</i>	
Ukrainian Global University - Interviewer	April-June 2023
<i>I interviewed Ukrainian students who want to study in a partner university abroad.</i>	
The Kharkiv and Przemyśl Project	August 2022
<i>I spent a week in Przemyśl (Poland) as a volunteer to help refugees who arrived (returned) from (to) Ukraine.</i>	
Ukrainian Global University - Interviewer	June-May 2022
<i>I interviewed a dozen of prospective undergraduate Ukrainian students who want to study in a partner university abroad.</i>	
Eutanasia Legale - Volunteer	July 2021
<i>I have collected signatures for a referendum to decriminalize euthanasia. The overall campaign gathered 1.2 million valid signatures.</i>	