

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

[Graph-enhanced Large Language Models in Asynchronous Plan Reasoning](#)

Pre-print (long paper)

Fangru Lin, **Emanuele La Malfa**, Valentin Hofmann, Elle Michelle Yang, Anthony Cohn, Janet Pierrehumbert

[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

Practical sessions

2024 (HT)

University of Oxford, UK

Machine Learning

2023 (MT)

Classes

University of Oxford, UK

Probabilistic Model Checking

2023 (MT)

Practical sessions

University of Oxford, UK

Ethical Computing in Practice

2023 (HT)

Practical sessions

University of Oxford, UK

Deep Learning in Healthcare

2023 (HT)

Practical sessions

University of Oxford, UK

Probabilistic Model Checking

2022 (MT)

Practical sessions

University of Oxford, UK

Machine Learning

2021 (MT)

Classes

University of Oxford, UK

Probabilistic Model Checking

2021 (MT)

Practical sessions

University of Oxford, UK

Fundamentals of Computer Science

2016 (Oct.-Dec.)

Practical sessions

Polytechnic University of Milan, Italy

Conferences and Workshops Organization

Benchmarking Large Language Models

28/11/2023

Workshop Organizer

The Alan Turing Institute, London, UK

LOD2020, LOD2021, LOD2022, LOD2023

Conference Chair

Lake District/Siena

Invited Lectures, Talks, and Presentations

Code Simulation Challenges for Large Language Models

02/02/24

Group Talk

Bocconi, Italy

On Robustness for Natural Language Processing

19/04/2023

Group Talk

ICREA, Barcelona

On the Notion of Robustness for Natural Language Processing

17/01/2023

Departmental Talk

King's College University of London, UK

Robustness for Natural Language Processing

22/04/2022

Lecture – Deep Fridays

University of Bologna, Italy

Explainable AI

04/03/2022

Lecture – Advanced Artificial Intelligence Course

Royal Holloway University of London, UK

Tutoring and Mentoring

Williams-Exeter Exchange Programme

2023-2024

Tutoring Saad Waheed and Alisa Kanganis, (Williams-Exeter Programme exchange students in machine learning).

University of Oxford

2022

Tutoring Edward Kusel and Aleksandar Radoslavov for their part-B projects (undergraduate in Computer Science).

Lead the Future - Mentor

2022-current

Lead the Future helps Italian STEM talents find their path to brilliant careers. I am currently mentoring 5 students.

Academic Revieweign and Volunteering

The Alan Turing Institute - Reviewer

October - December 2023

Reviewers for the Turing Fellow Program - Panel "Fundamental Research in Data Science and AI"

Ukrainian Global University - Interviewer

April-June 2023

I interviewed Ukrainian students who want to study in a partner university abroad.

The Kharkiv and Przemyśl Project

August 2022

I spent a week in Przemyśl (Poland) as a volunteer to help refugees who arrived (returned) from (to) Ukraine.

Ukrainian Global University - Interviewer

June-May 2022

I interviewed a dozen of prospective undergraduate Ukrainian students who want to study in a partner university abroad.

Eutanasia Legale - Volunteer

July 2021

I have collected signatures for a referendum to decriminalize euthanasia. The overall campaign gathered 1.2 million valid signatures.