

# 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 – Current  
*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

#### The ARRT of Language-Models-as-a-Service: Overview of a New Paradigm and its Challenges

Pre-print (long paper)

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

#### Language Models Tokenizers Introduce Unfairness Between Languages

NeurIPS'23 (long paper) - [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

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

## Invited Lectures, Talks, and Presentations

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

## Tutoring and Mentoring

<b>University of Oxford</b>	2022
<i>Tutoring two students for their part-B projects.</i>	
<b>Lead the Future - Mentor</b>	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>	

## Miscellaneous

**Programming Languages:** Python (fluent), worked with many languages/tools as part of my profession (C, js, ...)  
**Languages:** Italian (native), English (fluent), Spanish (intermediate)  
**Conference Chair:** LOD2020 - Siena, LOD2021 - Siena, LOD2022 - Lake District, LOD2023 - Lake District  
**Workshop Co-Organizer:** Benchmarking Large Language Models - The Alan Turing Institute, London, UK  
**Interests:** Books (any kind, any topic)

## Volunteering

<b>Ukrainian Global University - Interviewer</b>	April-June 2023
<i>I interviewed Ukrainian students who want to study in a partner university abroad.</i>	
<b>The Kharkiv and Przemyśl Project</b>	August 2022
<i>I spent a week in Przemyśl (Poland) as a volunteer to help refugees who arrived (returned) from (to) Ukraine.</i>	
<b>Ukrainian Global University - Interviewer</b>	June-May 2022
<i>I interviewed a dozen of prospective undergraduate Ukrainian students who want to study in a partner university abroad.</i>	
<b>Eutanasia Legale - Volunteer</b>	July 2021
<i>I have collected signatures for a referendum to decriminalize euthanasia. The overall campaign gathered 1.2 million valid signatures.</i>	