

## Mae Sosto (they/them)

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## About Myself

AI researcher with expertise in Natural Language Processing (NLP), driven by a strong commitment to fairness, diversity, and inclusion. As a queer intersectional activist, my research is grounded in a desire to challenge social injustices and explore how language technologies can both reflect and reshape societal norms. I have a strong interest in multidisciplinary research and actively seek collaborations at the intersection of NLP and social themes, particularly those related to social justice and human rights. I am open to exploring diverse applications where language technologies can support equity and inclusion.

I currently work full-time as a junior researcher at Centrum Wiskunde & Informatica (CWI) in Amsterdam, where I lead the *QueerGen* project in collaboration with the Human-Centered Data Analytics (HCDA) group supervised by Laura Hollink. My work focuses on analyzing perspectives and uncovering biases and unbalances in LLMs generations in the context of gender and sexuality, with particular attention to heterocisnormativity and LGBTQIA+ identities.

My latest publication, based on my master's thesis *QueerBench*, investigates how LLMs perpetuate discrimination toward queer identities, combining computational methods with critical perspectives from the social sciences.

I graduated with top honors in Computer Science (M.Sc.) from the University of Bologna (Italy) and Bielefeld University (Germany), where I have consistently pursued excellence in both academia and practical application.

## Research Publications

### Journal Articles

- 1 M. Sosto and A. Barrón-Cedeño, "Queerbench: Quantifying discrimination in language models toward queer identities," *arXiv preprint arXiv:2406.12399*, 2024.

## References

### Dr. Laura Hollink

Tenured Researcher, Head of Human-Centered Data Analytics Group

Centrum Wiskunde & Informatica (CWI)

Science Park 123, 1098 XG Amsterdam, Netherlands

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### Dr. Alberto Barrón-Cedeño

Associate Professor, Department of Interpreting and Translation

University of Bologna







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## Employment History

- 11/2024 – Current  **Researcher**  
*Centrum Wiskunde & Informatica (CWI) · Amsterdam, Netherlands*  
I lead the QueerGen project, a research initiative aims to investigate whether, and in what ways, English LLMs reproduce societal norms, specifically heterocisnormativity, and how societal biases related to gender and sexuality are manifested in their outputs. Though our tests we want to investigate how such models may contribute to the marginalization of queer identities. In this role, I am supervised by Laura Hollink and I collaborate closely with the dynamic Human-Centered Data Analytics (HCDA) team, working to advance the project's development.  
Website: <https://www.cwi.nl/en/>
- 10/2023 – 09/2024  **Software Developer**  
*Wospee Srl · Bologna, Italy*  
Focused on developing user-friendly HR platforms using Python, MySQL, and AWS. Led initiatives in HR solutions, managed client relations and internal projects, and contributed to the strategic development roadmap. Integrated new functionalities with the Cezanne HR system.  
Website: <https://wospee.com>
- 10/2021 – 30/09/2022  **Software Developer**  
*Lavoropiù · Bologna, Italy*  
Full-stack development of the company's management system. Used C#, JavaScript, ASP, HTML, CSS, SQL, Bootstrap, and React. Built hybrid mobile apps with Cordova and managed SQL Server databases. Provided system administration and client support.  
Website: <https://www.lavoropiu.it/>
- 08/2021 – 12/2021  **Software Developer**  
*Istituto Medico Legale · Bologna, Italy*  
Developed a web platform to connect legal and medical professionals with clients. Full-stack development using JavaScript, ASP, HTML, CSS, SQL, Bootstrap, and React.  
Website: <https://www.istitutomedicolegale.it>
- 10/2019 – 11/2019  **Software Developer**  
*CHEBUONI.IT S.R.L · Bologna, Italy*  
Gained practical experience with React, Next.js, Vue.js, and JSON for building interactive frontend components and small-scale projects.  
Website: <https://goodiewebgroup.com/>
- 11/2016 – 12/2016  **Network Specialist**  
*Lepida SPA · Bologna, Italy*  
Configured routers and switches, maintained servers, installed new network equipment, and managed VLANs. Studied key communication protocols.  
Website: <http://www.lepida.it>

## Employment History (continued)

06/2016 – 07/2016

### IT Support Technician

*GPI · Cona (FE), Italy*

Provided OS configuration, system backups, hardware replacement, and Help Desk support. Troubleshoot issues with various devices including computers, printers, and tablets.

Website: <http://www.gpi.it>

04/2016 – 04/2016

### Helpdesk

*VAR Group · Funo (BO), Italy*

Conducted quality control and provided Help Desk support. Completed CRM training and analyzed critical business processes.

Website: <http://www.vargroup.it>

03/2016 – 03/2016

### IT Trainer

*Cosworth Electronic LTD · Cambridge, United Kingdom*

Gained insights into motorsport and automotive electronics R&D and production. Explored smartphone data for promoting wellbeing.

Website: <http://www.cosworth.co>

## Education

09/2021 – 14/12/2023

### Master's Degree in Computer Science

*Alma Mater Studiorum – University of Bologna · Bologna, Italy*

Final grade: 100 with honors

Thesis: *QueerBench: Quantifying Discrimination in Language Models towards Queer Identities*

Website: <https://www.unibo.it>

09/2022 – 03/2023

### Double Degree in Computer Science

Final grade: 1 out of 5 (1 is the best)

*Bielefeld University · Bielefeld, Germany*

Part of the double degree program in collaboration with the University of Bologna.

09/2017 – 03/2021

### Bachelor's Degree in Computer Science

*Alma Mater Studiorum – University of Bologna · Bologna, Italy*

Final grade: 97 out of 110

Thesis: *Design and development of an application for clinical data management oriented to people affected by Thalassemia*

Website: <https://www.unibo.it>

## Education (continued)

09/2012 – 07/2017

### ■ Secondary School Diploma in IT

*Istituto Tecnico Aldini Valeriani Sirani · Bologna, Italy*

Final grade: 91 out of 100

Focused on Systems and Networks, Technologies, Information Systems Design, Telecommunications, and IT.

Basic knowledge of Telecommunications and Electronics.

Completed two internships abroad with practical experience in various companies.

Website: <http://www.iav.it/home>

## Skills

### Languages

- Mother tongue: Italian.  
Strong reading, writing and speaking competencies for English.  
Basic knowledge and understanding of Spanish.

### Coding

- NLP, Machine Learning, Deep Learning, C, C++, Java, Python (excellent), PHP, R, SQL, Bash, Node.js, Ruby, JavaScript, ReactJS, HTML5, CSS3, ASP.NET Web Forms, ASP.NET Web API, REST/SOAP Web Services, JSON, XML, Android (basic).

### Web Dev

- HTML, CSS, JavaScript, React, Bootstrap, RESTful APIs, Web Services (SOAP/REST), ASP.NET, Android Studio.

### Databases

- MySQL, PostgreSQL, MongoDB, SQLite, SQL Server.

### Misc.

- Academic research, team collaboration, problem solving, social media communication tools, Natural Language Processing (NLP), AI, system networking, digital platform usability.

### Driving License

- B

## Miscellaneous Experience

### Certification

2022

#### ■ B2 CEFR Language Certification (English)

*University Language Center, Alma Mater Studiorum – University of Bologna · Bologna, Italy*

Website: <https://centri.unibo.it/cla/it>

2021

#### ■ B2 English Language Certificate

*British School Group · Bologna, Italy*




Website: <https://britishschool.it>

2016



#### ■ B1 English Language Certificate

*Select English Cambridge · Cambridge, United Kingdom*


## Miscellaneous Experience (continued)

- 2015  **High Risk Safety Course (COD. 4 / 15A)**  
*Istituto Tecnico Aldini Valeriani Sirani · Bologna, Italy*  
Occupational health and safety training: Specific training for high-risk environments (12 hours).  
Covered topics: workplace labeling, stress, PPE, microclimate and lighting, noise, vibrations, accident risks, radiation, chemical and biological hazards, emergency procedures, fall prevention, load handling, and more.  
Website: <http://www.iav.it/home>
-  **A2 English Language Course**  
*British International School · London, United Kingdom*  
Address: Chiswick High Road 22
- 2014  **General Training Course for Workers**  
*Istituto Tecnico Aldini Valeriani Sirani · Bologna, Italy*  
Occupational safety and health fundamentals as per Italian regulations.  
Website: <http://www.iav.it/home>

## Volunteering

- 2022 – Current  **LGBTQIA+ Activist**  
*Il Cassero LGBTQIA+ Center · Bologna, Italy*  
Active member of Il Cassero, contributing to community-building, advocacy, and awareness campaigns focused on LGBTQIA+ rights and intersectional justice.  
Website: <https://cassero.it>
-  **Some Prefer Cake Festival**  
*Bologna, Italy*  
Ongoing volunteer for the international lesbian film festival “Some Prefer Cake,” supporting event organization, audience engagement, and queer feminist cultural programming.  
Website: <https://someprefercakefestival.com/en/>

## Projects

- 08/2023 – 12/2023  **Master Thesis: QueerBench: Quantifying Discrimination in Language Models towards Queer Identities**  
*University of Bologna · Bologna, Italy*  
This thesis investigates societal biases in NLP, focusing on the representation of LGBTQIA+ identities in large language models (LLMs). Using a template-based masked language modelling (MLM) approach, it assesses harmfulness in sentence completions based on subject identity (queer vs. non-queer) and pronoun usage (binary, neutral, neo). Results reveal significantly higher harmfulness in completions involving queer subjects. The work contributes to bias mitigation strategies in LLMs and supports more inclusive language processing.

## Miscellaneous Experience (continued)

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12/2020 – 03/2021

■ **Bachelor Thesis: TalApp – A Mobile App for People with Thalassemia**

*University of Bologna · Bologna, Italy*

This thesis details the design, development, and testing of TalApp, an Android app supporting thalassemia patients in managing clinical data, transfusions, exams, and therapies. The app includes notification systems to assist with ongoing treatment compliance. Informed by patient and doctor consultation, TalApp was usability tested and is available on the Play Store.

*Available at:* <https://play.google.com/store/apps/details?id=com.MartinaSosto.talapp&gl=IT>