Federica Bologna

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Research Interests

Natural Language Processing (NLP), Healthcare, Large Language Models (LLMs), Patient-Centered Care, Gender Equity, Cultural Analytics, Causal Inference

Selected Research Experience

Evaluation of Generative Language Models for Patient Question Answering
Ithaca, NY

Cornell University
Sep 2023 - Present

- Investigated the information quality, empathy, and actionability of GPT4 responses to endometriosis-specific and general patient questions.
- Compared GPT4 performance for patient question answering across three prompting strategies.
- Formulating recommendations for patients on how to use prompts to receive more accurate responses from GPT-based tools.

Reddit Users' Perceptions of Excision and Ablation Surgery
Ithaca, NY

Cornell University, Weill Cornell
Jun 2023 - Sep 2023

- Analyzed user sentiment toward mentions of excision or ablation surgery, as well as support type and topics most associated with each surgery in two endometriosis subreddits.
- Leveraged a combination of few-shot classification with GPT4, fine-tuning and supervised classification with DistilBERT, and topic modeling.
- Submitted publication and presented findings at the 2023 global congress of the American Association of Gynecologic Laparoscopists (AAGL).

User Needs and Peer Support in Endometriosis Online Communities
Ithaca, NY

Cornell University
Sep 2021 - Dec 2022

- Investigated aggregate patients' needs, impact of relationships on patients' experiences, and peer support practices in two endometriosis online communities.
- Identified trends between a post's subject matter, the people and relationships mentioned, and the type of support the post seeks using supervised classification with DistilBERT and LDA topic modeling.
- Submitted publication and presented preliminary findings at DH2022.

Selected Work Experience

NYC Health + Hospitals
New York, NY

Siegel Family Endowment PiTech PhD Impact Fellow
Jun 2023 - Aug 2023

- Evaluated the impact of current policies at relieving nurses' alert fatigue using data analysis.
- Provided design recommendations to improve the integration of medical alerts within nurses workflows after having conducted and analyzed interviews.

Cornell University   *Ithaca, NY*

Teaching Assistant for Studying Social Inequality with Data Science   *Jan 2023 - May 2023*

- I won an **Outstanding Teaching Award**, wohoo!
- Delivered a lecture on non-parametric estimation of causal effects.
- Curated this independent investigation students conducted over multiple classes.

University of Bologna   *Bologna, Italy*

Research Assistant   *Aug 2020 - Jul 2021*

- Evaluated the suitability of open access datasets for academic evaluation processes and examined committees' decisions with citation network analysis and supervised classification.
- Built a pipeline to collect and manage 275M+ bibliographic and citation records from Microsoft Academic Graph, Crossref, OpenAIRE and OpenCitations.
- Published results Quantitative Science Studies and Scientometrics.

Publications

Under review	Endometriosis Online Communities: A Quantitative Analysis
	Federica Bologna, Rosamond Thalken, David Mimno, Matthew Wilkens
Under review	Stylometric Identification of the "Unknown Male Author" in Veronica Franco's *Terze rime*
	Giulia Andreoni, **Federica Bologna**, Marilyn Migiel
2022	Do open citations give insights on the qualitative peer-review evaluation in research assessments? An analysis of the Italian National Scientific Qualification
	Federica Bologna, Angelo Di Iorio, Silvio Peroni, Francesco Poggi
	Scientometrics
2022	Open bibliographic data and the Italian National Scientific Qualification: Measuring coverage of academic fields
	Federica Bologna, Angelo Di Iorio, Silvio Peroni, Francesco Poggi
	Quantitative Science Studies
2020	A Computational Approach to Urban Space in Science Fiction
	Federica Bologna
	Journal of Cultural Analytics

Education

Cornell University   *Ithaca, N.Y.*

Ph.D. in Information Science | Minor: Sociology   *Expected May 2027*

University of Bologna   *Bologna, Italy*

M.A. in Modern, Post-Colonial and Comparative Literature   *2020*

University of Bologna *Bologna, Italy*

B.A. in Foreign Languages and Literature *2017*

Skills

Programming	Python (Scikit-learn, BERT, Spacy, NLTK, Pandas, NumPy, Matplotlib, Plotly, Seaborn etc.), R (tidyverse), Bash
Tools	Git(Hub), LaTeX(Overleaf), Qualtrics, Hugging Face, Microsoft Office
Methods	NLP (supervised classification, topic modeling, etc.), Quantitative (causal inference, data analysis, statistical testing), Qualitative (surveys)

Fun facts :)

I am obsessed with poetry, cats, yoga, thrift-shopping, and binge-watching animes.