Federica Bologna

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Education

Cornell University *Ithaca, N.Y.*
Ph.D. in Information Science | Minor: Sociology *Expected May 2026*

Cornell University *Ithaca, N.Y.*
M.S. in Information Science *Feb 2024*

Selected Work Experience

Cornell University *Ithaca, NY*
Teaching Assistant *Jan 2021 - Dec 2024*

- Taught weekly sections on data science, machine learning (ML), and natural language processing (NLP).
- Delivered lectures on social media analysis with NLP and non-parametric estimation of causal effects.
- Curated a class activity on how to explore data sets to answer social science questions.

NYC Health + Hospitals *New York, NY*
Siegel Family Endowment PiTech PhD Impact Fellow *Jun - Aug 2023*

- Evaluated management of medical alerts by comparing pre- and post- intervention alert rates using non-parametric statistical testing.
- Demonstrated that revising alert criteria can reduce unnecessary alerts by up to 94%, while improving alert design can reduce overridden alerts by up to 64%.
- Provided strategies to revise alerts to hospital leadership, soon to be implemented by the informatics team.

Selected Projects

Evaluation of GPT-4 for Patient Question Answering *Ithaca, NY*
Cornell University, Columbia University *Sep 2023 - Mar 2024*

- Extracted patient questions from Reddit using supervised classification with a fine-tuned BERT model.
- Devised three prompting strategies to generate answers to clinical questions using OpenAI's GPT-4 model.
- Compared the quality of the answers across prompting strategies with non-parametric statistical testing.

Reddit Users' Perceptions of Excision and Ablation Surgery *Ithaca, NY*
Cornell University, Weill Cornell *Jun - Sep 2023*

- Analyzed user needs and perceptions of surgery in 15,000+ posts from endometriosis online communities.
- Leveraged few-shot classification with GPT-4, fine-tuning and supervised classification with DistilBERT, and LDA topic modeling.
- Published findings in the Journal of Minimally Invasive Gynecology (JMIG).

Skills

Programming Python (Scikit-learn, BERT, Spacy, NLTK, Pandas, NumPy, Matplotlib, Plotly, Seaborn etc.),
R (tidyverse), Bash, SQL

Tools Git(Hub), LaTeX(Overleaf), Qualtrics, Hugging Face, Microsoft Office

Methods NLP (supervised classification, topic modeling, etc.), Quantitative (causal inference, data science, statistical testing, randomized experiments), Qualitative (surveys)