John Bollenbacher

Data Science & AI Consultant

Contact

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jbollenbacher.github.io 🌐

jmbollenbacher **in**

Languages & Tools

Python (Primary), SQL, R, JS

pandas, pytorch, sklearn, statsmodels, nltk, ollama, etc.

Cloud Computing (GCP) & HPC

Linux, Bash, Git, VSCode, etc.

Data Science & AI

AI Task Automation

AI Performance Evaluation

AI WebApp Development

Natural Language Processing

Machine Learning

Data Visualization

Geospatial Data Science

Time Series & Point Processes

Statistics, Causal Inference, Bayesian Modeling

Consulting

Proposal Writing

Opportunity Assessment

Work Plan Development

Project Management

Client Communications

Technical Reports

Presentations & Demos

Prior Domains of Practice

Social Media & Communications

Public Health & Demography

Political Science & Public Policy

Environment & Climate Science

Energy Technology

Education

May 2024	**PhD** Informatics & Complex Systems; minor in Statistics	Indiana University
May 2019	**MS** Informatics	Indiana University
May 2016	**BS** Physics; minor Computer Science	Georgia Institute of Technology

Selected Experience

2022 - Present — **Research Data Scientist** — RTI International

• Consulting with US government agencies, Fortune 500 companies, and internal R&D teams to provide AI-based task automation and data analyses to support policymaking and strategic decision making
• Specializing in NLP, causal inference, and applied LLMs / Generative AI
• Co-Authoring $10+ million of successful contract and grant proposals

2021 - Present — **Freelance AI & DS Consultant** — GeniusMesh, AE Studio, ENTACT, etc.

Delivering AI and data science solutions for clients including: building recommendation systems, guiding machine learning R&D, and automating document analysis workflows for regulatory compliance.

2016 - 2022 — **Research Assistant & Assistant Instructor** — Indiana University

Analyzed large social media datasets and modeled & simulated social systems (2017-2019; 2021-2022). Taught an ethics of technology course (2019 - 2022) and a discrete math course (2016 - 2017).

Selected Projects & Research

2024 - Present — **Supporting NSF Program Evaluation & UX Improvements** — *Contract Leadership*

Leading the analytics team on a multimillion dollar contract supporting the US National Science Foundation's program evaluation work and related program UX improvements. Conducting analyses of program evaluation reports, website user experience data, and communications strategy outcomes to support decision making these areas. Regular reporting and meetings with the client's contract officer & technical leads.

2022 - Present — **Using LLMs to Accelerate Qualitative Analyses** — *Applied AI*

Developing Large Language Model (LLM) tools & apps to solve problems for teams of qualitative analysts & communications staff. Use cases include: document-based question answering (RAG), deductive & inductive coding of texts, plain language writing, research meta-analyses, etc.

2020 - 2023 — **Measuring Offline Effects of Online Social Media** — *PhD Research*

Developed methods for causally linking online content to offline outcomes in public health and politics. Showed that antivaccine Tweets lead to reduced vaccine uptake and increased deaths during the COVID pandemic. Showed that the UK Parliament's attention follows public attention on social media. Analyzed tens of billions of social posts.