

David Blincoe

Senior Machine Learning Engineer

Search | Query Understanding | Generative Retrieval

Lakeside Park, KY
dblincoe@gmail.com | 859.957.5494

david-blincoe.com | LinkedIn | GitHub

Senior machine learning engineer building large-scale search and GenAI systems across query understanding, query rewriting, autosuggest, semantic relevance, generative retrieval, and production LLM workflows.

EXPERIENCE

Etsy (Remote, Cincinnati Area)

Senior Software Engineer II, Machine Learning

Senior Software Engineer I, Machine Learning

Software Engineer II, Machine Learning

Mar 2025-Present

Apr 2023-Mar 2025

Oct 2021-Apr 2023

- Owned generative query rewriting across all organic search traffic using a decoder-only model, with p99 latency below 70 ms.
- Led and defined the roadmap for encoder-decoder autosuggest, using supervised fine-tuning (SFT) and reinforcement learning (RL); p99 latency below 100 ms.
- Architected shared infrastructure for LLM workflows, including orchestration, data contracts, evaluation, caching, and observability; reduced duplicated work across 100+ pipelines and approximately 15 teams while mentoring two engineers toward independent ownership.
- Built a frontier-LLM labeling pipeline for 500,000 examples and an offline multimodal LLM teacher processing 20 million examples daily, enabling A/B relevance measurement and supplying training data to a traffic-serving model.
- Shaped the initial roadmap and built a proof of concept for large-scale generative-retrieval training in marketplace search.
- Previously worked on cross-language information retrieval across Etsy's 11-language search footprint.

Case Western Reserve University | Interactive Machine Learning Researcher (Cleveland, OH)

Aug 2019-May 2022

- Developed interfaces that incorporated domain-expert knowledge into machine learning classifiers.

Etsy | Software Engineering Intern (Brooklyn, NY)

May-Aug 2020

- Designed an internal TensorFlow evaluation toolkit that surfaced listing-impact insights not captured by standard model metrics.

MIM Software | Software Engineering Intern (Cleveland, OH)

May-Aug 2019

- Redesigned an import and package manager to support add-ons and extensions shared across client sites and user groups.

Case Western Reserve University | EDIFES Research Assistant (Cleveland, OH)

Jan-Dec 2018

- Prepared the EDIFES virtual energy-audit tool for public release and maintained multiple repositories to enforce consistent R coding standards.

SELECTED RESEARCH

OptAgent: Optimizing Query Rewriting for E-commerce via Multi-Agent Simulation

Divij Handa, **David Blincoe**, Orson Adams, Yinlin Fu

2025

arXiv:2510.03771

EDUCATION

Case Western Reserve University

B.S. in Computer Science, 2021

Graduate coursework in Computer Science, Human-Computer Interaction, 2022

M.S. coursework completed; thesis not completed. Full-tuition A.W. Smith Innovation Scholarship.

Cleveland, OH

GPA: 3.90

TECHNICAL SKILLS

ML and Search Generative Retrieval, Query Understanding, Query Rewriting, Autosuggest, Semantic Relevance, Cross-Language IR, Encoder-Decoder Models, LLM Evaluation, Agentic AI

Languages and Frameworks Python, PyTorch, LangChain, Ray, TensorFlow, SQL, Git