

Matthew Boraske

Data Scientist

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Education

West Chester University of Pennsylvania | M.S. Computer Science

January 2023 - May 2024

- Graduated Summa Cum Laude with a 4.0 GPA.
- Completed thesis "The Efficacy of Finetuning Large Language Models for Interpersonal Conflict Resolution" under Dr. Richard Burns and published "Context is Key: Aligning Large Language Models with Human Moral Judgments through Retrieval-Augmented Generation" at the 37th International FLAIRS Conference on AI.
- Graduate Researcher: designed a reinforcement learning environment for a counter-service, real-time restaurant with Dr. Ashik Ahmed Bhuiyan, then trained PPO and A2C agents to optimize labor allocation and minimize customer wait times.

The Ohio State University | B.S. Industrial and Systems Engineering

August 2017 - May 2021

- Graduated Cum Laude with a 3.53 GPA and completed a Minor in Computer Science.
- Undergraduate Teaching Assistant for Fundamentals of Engineering Honors, mentoring students through engineering labs, C/C++ coding projects, and a semester-long robotics competition.

Experience

CSL Behring | Data Scientist

August 2023 - Present

- Serve as functional expert in NLP, machine learning, and generative AI, developing AI data retrieval tools using retrieval augmented generation with fine-tuned embedding models.
- Led development of a conversational AI tool leveraging plasma donor reviews to provide actionable insights for donation center managers, driving approximately 15% improvement in average review scores.
- Deployed an internal chatbot enabling private, secure conversations with GPT and Llama 3 models, facilitating safe enterprise adoption of generative AI.

CSL Behring | Data Scientist Intern

June 2023 - August 2023

- Developed a generative AI application that translated natural language queries into SQL code for execution on connected databases, addressing technical barriers to data-driven decision-making.
- Fine-tuned Flan-T5-XL model for English-to-SQL translation using custom SQL instruction and preference data, achieving high accuracy on complex business queries.

Epic Systems | Technical Solutions Engineer

June 2021 - October 2022

- Provided expert support on MyChart patient portal integration for U.S. healthcare systems using Epic EMR, troubleshooting critical issues and optimizing compatibility for millions of end users.
- Led MyChart Mobile expert support group in building CI/CD pipelines to automate software updates, saving up to 5 hours per week in manual deployment time.

Honda of America Manufacturing, Inc. | Machine Learning Engineering Co-Op

May 2020 - August 2020

- Trained a deep neural network that predicted optimal times for preventative maintenance of production plant assets with 88% accuracy, improving equipment longevity and reducing disruptive downtimes.
- Collected and preprocessed sensor data from manufacturing equipment, engineering features that captured temporal patterns and failure indicators.

Technical Skills

Data Science & AI: Natural Language Processing (NLP), Large Language Models (LLMs), Fine-tuning, Deep Learning, Reinforcement Learning, Machine Learning Operations (MLOps), Retrieval Augmented Generation (RAG)

Programming & Tools: Python, Java, C++, C, SQL, PyTorch, TensorFlow, Langchain, HuggingFace, Scikit-learn, Pandas, Apache Spark, MLflow, OpenCV, Flask, FastAPI, Django, Streamlit, React.js, Docker, Kubernetes, Git, Linux

Cloud & Platforms: Databricks, Microsoft Azure, AWS (S3, EC2, ECS, Redshift, Bedrock, Sagemaker, Lambda), GitLab

Certifications

AWS Certified Solutions Architect – Associate Issued September 2025, Expires September 2028

AWS Certified Cloud Practitioner Issued September 2025, Expires September 2028

Databricks Certified Machine Learning Associate Issued September 2024, Expires September 2026