MATTHEW BORASKE
Data Scientist

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Education

West Chester University of Pennsylvania | M.S. Computer Science　　　　Jan 2023 – May 2024
- GPA: 4.0 | Thesis: "The Efficacy of Finetuning Large Language Models for Interpersonal Conflict Resolution"
- Advised by Dr. Richard Burns | Link to Thesis: https://bit.ly/3SV1IUO
- Coursework: Software Engineering, Algorithm Analysis, Compiler Design, Functional Programming, Databases

The Ohio State University | B.S. Industrial and Systems Engineering　　　　Aug 2017 – May 2021
GPA: 3.53 | Minor: Computer Science | Graduated Cum Laude with Honors | Maximus Scholarship Recipient
- Undergraduate Teaching Assistant for Fundamentals of Engineering Honors (FEH) course series.
- Coursework: Project Engineering, Product Design, Stochastic Modeling, Machine Learning, Nonlinear Optimization

Experience

CSL | Data Scientist　　　　August 2023 – Present
- Serving as a functional expert in natural language processing, machine learning, and generative AI.
- Creating AI data retrieval tools by using retrieval augmented generation with fine-tuned embedding models.
- Led the development of a conversational AI tool that leverages plasma donor reviews to provide insights for donation center managers, driving approximately a 15% improvement in average review scores.
- Deployed an internal chatbot to facilitate private and secure conversations with GPT and Llama 3 models.

CSL | Data Scientist Intern　　　　June 2023 – August 2023
- Developed a generative AI application that addressed technical barriers to data-driven decision-making by translating English queries into SQL code for execution on connected databases. This was achieved by fine-tuning Flan-T5-XL for English-to-SQL translation using a mixture of SQL instruction and preference data.

Graduate Researcher | West Chester University of Pennsylvania　　　　January 2024 – May 2024
- Worked with Dr. Ashik Ahmed Bhuiyan to design a reinforcement learning environment for a counter-service, real-time restaurant, then trained PPO and A2C agents to allocate human labor that minimized wait times.

Epic Systems | Technical Solutions Engineer　　　　June 2021 – Oct 2022
- Provided expert support on MyChart patient portal integration for U.S. healthcare systems using Epic EMR by troubleshooting critical issues, optimizing system compatibility, and improving end-user performance.
- Led the MyChart Mobile expert support group in building CI/CD pipelines to automate updates, saving up to five hours per week, and redesigning the login workflow to include single sign-on authentication.
- Certified in the following Epic applications: MyChart, Cadence, Prelude, Welcome, Cogito, EpicCare Link.

Honda | Machine Learning Engineering Co-Op　　　　May 2020 – Aug 2020
- Trained a deep neural network that predicted optimal times for preventative maintenance of production plant assets with 88% accuracy, thereby improving equipment longevity and reducing disruptive downtimes.

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: Databricks Machine Learning Associate (Expires 09/26), AWS Cloud Practitioner (Expires 12/25)