

Daniel Portnov

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EDUCATION

Georgia Institute of Technology

Master of Science in Computer Science, Specialization in Machine Learning

University of Wisconsin-Madison

Bachelor of Science in Computer Science, Minor in Mathematics

Atlanta, GA (Remote)

Sept. 2023 – Present

Madison, WI

Sept. 2018 – May 2021

EXPERIENCE

AI/ML Engineer

General Motors

Feb. 2023 – Aug. 2024

Warren, MI

- Refined production-grade transformer model for lane detection, optimizing input data and evaluating outputs to enhance autonomous vehicle vision systems
- Developed time series interpolation algorithm with PySpark, standardizing batch data intervals and increasing analysis efficiency by 80%
- Implemented a tailored back-end data loading system utilizing PyTorch for Delta Tables, enabling faster database interactions, reducing loading times by 50%, and supporting robust model training without delays
- Reorganized data from parquet files into Databricks Delta Tables to enhance accessibility for model training

Automated Driving Software Engineer

General Motors

Aug. 2022 – Feb. 2023

Warren, MI

- Wrote Python code to detect data corruption, preserving critical information and saving \$500,000+ in wasted data
- Refactored legacy codebase using clean code practices and modern Python techniques, improving readability
- Collaborated cross-functionally with teams in the Middle East to ensure that the data annotation tools met the requirements of the USA data collection team

AV System Safety Engineer

General Motors

Feb. 2022 – Aug. 2022

Warren, MI

- Expanded unit test coverage for autonomous vehicle systems from 45% to 95%, enhancing software reliability and reducing critical bugs
- Reduced new hire on-boarding time from 1 week to 1 day by creating a Docker container with a pre-loaded development environment, ensuring a consistent setup across all machines
- Contributed to safety-focused discussions for the Cruise Origin self-driving taxi, ensuring engineering decisions prioritized passenger and pedestrian safety

Embedded Software Engineer

General Motors

June 2021 – Feb. 2022

Warren, MI

- Designed a client-server model for vehicle-to-OTA server communication, ensuring secure and efficient software update transfers

PROJECTS

USCIS Chatbot | *Python, Pinecone, Langchain, SQL, Streamlit, Llama*

Oct 2024

- Developed a responsive chatbot using LangChain, Pinecone, and Llama via Ollama to deliver context-aware answers to user queries on USCIS policies.
- Generated vector embeddings for USCIS manual chunks using LangChain, storing them in Pinecone
- Used a hash of chunked content as a key in Pinecone for efficient retrieval of full pages from an SQLite database
- Designed an interactive UI with Streamlit, enabling users to easily engage with the chatbot

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, C/C++

AI/ML: LangChain, Llama, LLMs, RAGs, Deep Learning, Reinforcement Learning

Automotive: ADAS, Radar, LiDAR

Cloud & DevOps: Docker, Azure

Developer Tools: Git, Linux, Conda, VS Code, Jira, Confluence, Bitbucket, Agile

Data Management: Databricks, Pinecone, Spark, SQL, Airflow, Snowflake

Libraries: PyTorch, Pandas, NumPy, Matplotlib, Scikit-learn, Streamlit