

# Daniel Portnov

952-465-8964 | [danny.portnov@gmail.com](mailto:danny.portnov@gmail.com) | West Bloomfield, MI  
[linkedin.com/in/danielportnov](https://www.linkedin.com/in/danielportnov) | [github.com/danielportnov](https://github.com/danielportnov)

## 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

### MLOps Data Engineer

*Volkswagen Group of America*

- TBD

Jan. 2025 – Present

*Auburn Hills, MI*

### 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*

*Aug. 2022 – Feb. 2023*

- 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*

*Feb. 2022 – Aug. 2022*

- Increased C++ unit test coverage from 45% to 95% for autonomous vehicle systems, aligning with ASIL and ISO 26262 standards to enhance reliability and reduce high-severity defects
- Introduced Docker containerization to streamline on-boarding, reducing setup time by 85% (from 1 week to 1 day) with a pre-configured development environment, ensuring consistent deployment across all systems

*Embedded Software Engineer*

*June 2021 – Feb. 2022*

- Engineered a client-server architecture for secure OTA data transfer, optimizing back-office to vehicle software update protocols
- Implemented SQL-based regular expression parsing to automate error log simplification for failed OTA updates, optimizing log diagnostics and error resolution workflows

## 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

## TECHNICAL SKILLS

**Programming Languages:** Python, JavaScript, C/C++

**AI & Machine Learning:** LangChain, Llama, Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Deep Learning, Reinforcement Learning

**Automotive Systems:** ADAS, Radar, LiDAR

**Cloud & DevOps:** Docker, Azure, CI/CD

**Data Engineering & Management:** Databricks, Pinecone, Apache Spark, SQL, Airflow, Snowflake

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

**Data Science Libraries:** PyTorch, Pandas, NumPy, Matplotlib, Scikit-learn, Streamlit