Daniel Portnov

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Education

Georgia Institute of Technology — Atlanta, GA (Remote)
Master of Science in Computer Science, Specialization in Machine Learning — *Sept. 2023 – Present*

University of Wisconsin-Madison — Madison, WI
Bachelor of Science in Computer Science, Minor in Mathematics — *Sept. 2018 – May 2021*

Experience

MLOps Data Engineer — Jan. 2025 – Present
Volkswagen Group of America — *Auburn Hills, MI*

- Engineered an end-to-end clustering pipeline for warranty claims using BigQuery ML, HDBSCAN, and Vertex AI, automating detection of early-stage failure trends across large datasets
- Created a CI/CD pipeline with GitHub Actions for automated testing and deployment of an LLM-based HR application onto Google Cloud Platform

AI/ML Engineer — Feb. 2023 – Sept. 2024
General Motors — *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*

- Implemented SQL-based regular expression parsing to automate error log simplification for failed OTA updates, optimizing log diagnostics and error resolution workflows

Technical Skills

Programming Languages: Python, JavaScript, C/C++
AI & Machine Learning: Vertex AI, LangChain, LLMs, RAG, Deep Learning, Reinforcement Learning
Automotive Systems: ADAS, Radar, LiDAR
Cloud & DevOps: GCP, Azure, Docker, GitHub Actions, CI/CD
Data Engineering & Management: BigQuery, Databricks, Apache Spark, SQL, Pinecone
UI & Visualization: KNIME, Streamlit, Matplotlib
Developer & Collaboration Tools: Git, Linux, Conda, VS Code, Jira, Confluence, Bitbucket, Agile
Data Science Libraries: PyTorch, Pandas, NumPy, Scikit-learn