Manuel Lancastre

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Education

Carnegie Mellon University — Pittsburgh, PA
M.S. in Artificial Intelligence Engineering — *Jan. 2024 – May 2025*

Carnegie Mellon University — Pittsburgh, PA
B.S. in Mechanical Engineering, University Honors, GPA: 3.5 — *Aug. 2020 – May 2024*

Experience

Software Engineering Intern — May 2024 – August 2024
Oracle — *Boston, MA*

- Led an end-to-end project to enable program managers to monitor subscription performance, involving the design and deployment of two new star schemas
- Ingested and integrated data from external databases into the internal system, creating and deploying optimized star schemas for efficient data analysis
- Generated an RPD image using metadata and developed dynamic dashboards in a visualization tool, enhancing data-driven decision-making

Systems Engineering Intern — May 2023 – August 2023
Volvo Group North America — *Greensboro, NC*

- Collected vehicle data such as tire pressure and temperature, vehicle load, speed and more to train a machine learning model that continuously predicts the remaining life of the tires on the truck
- Solved nine product issues reported from customers or the testing teams by analyzing the systems of the truck and how they work together
- Wrote eight technical reports for relevant end user functions of the truck including an overview of the function, requirements for different use cases, and topologies for communication between the ECUs

Data Analysis Intern — May 2022 – August 2022
EDP Renewables — *Houston, TX*

- Took in fault modes data from wind turbine suppliers and created five python scripts to automatically turn the supplier data into data that fit EDP's system, saving 20 employee hours a month and increasing accuracy
- Analyzed and updated SQL code for operational reports

Projects

Poker AI | *Python, Numpy, PyTorch, TensorFlow, Docker*

- Developed a high-performance AI agent using ensemble evolutionary methods, a deep reinforcement learning algorithm
- Designed and implemented the entire AI agent framework, from environment setup to agent interaction and visualization
- Outperformed all benchmarks and amateur level human players

Soccer AI | *Python, Numpy, TensorFlow*

- Developed an interactive soccer simulation game that can be played against another user or an AI bot
- Implemented dynamic player movements, ball physics, and automated goalie behavior for a realistic gameplay experience
- Designed user input controls for dribbling, passing, and defending, allowing for both single-player and two-player modes
- Integrated game logic to track possession, shots, and scores, enhancing game flow and statistics
- Integrated live statistics into an AI Model that beats amateur human players

Technical Skills

Languages: Java, Python, C/C++, SQL, JavaScript, Matlab, R
Frameworks: React, Node.js, FastAPI
Developer Tools: Git, Docker, Kubernetes, Oracle SQL Developer, AWS, VS Code, IntelliJ
Libraries: Pandas, NumPy, PyTorch, TensorFlow, Matplotlib