Arber Shala

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Education

University of Alberta - Bachelor of Science with Specialization in Computer Science 2020 - 2025

Relevant Coursework: Information Retrieval, Machine Learning, Software Engineering, Numerical Methods

Experience

University of Alberta: Cmput 401 Product Management Capstone Edmonton, Alberta

Web Developer 09/2024 - 12/2024

- Built a website application for a professor at the Department of Pharmacology using the Django REST framework.
- Designed a well-organized database to effectively manage dozens of exams and hundreds of questions.
- Engaged in extensive parsing of .txt files to extract source data to insert into the database.
- Engaged in consistent Github use to manage the project workflow with teammates and maintain CI/CD pipelines.
- Developed well-defined test programs to test if the code base produces outcomes as expected.
- Communicated project requirements and progress with our client on a regular basis.
- Github Pages Link

University of Alberta: Cmput 469 AI Capstone Edmonton, Alberta

Research Assistant 01/2025 - 04/2025

- Supervised by Dr. Russ Greiner.
- Designed and conducted experiments culminating in a research paper exploring how two backpropagation methods, Real Time Recurrent Learning (RTRL) and Backpropagation Through Time (BPTT) compare in performance when training Streaming Deep Reinforcement Learning Agents in partially observable environments.
- Used the scientific method to design and conduct experiments for collection of statistically significant data.
- Produced a well-organized research paper containing background on RTRL and BPTT, the design of our experiments, and the results produced from each experiment.
- Link to paper

Projects

Edmonton Careers Data Warehouse | SQL, Databricks 1/06/2026

- Conducted change over time, cumulative, performance, and part to whole analysis on a data warehouse consisting of sales and product data of a company.

Advanced Data Analytics Project | SQL, MSSQL, Power BI 1/06/2026

- Conducted change over time, cumulative, performance, and part to whole analysis on a data warehouse consisting of sales and product data of a company.
- Visualized the report generated on Power BI.
- Github Link

High Volume ETL Pipeline and Data Warehouse | SQL, MSSQL 10/15/2025 - 11/02/2025

- Designed an ETL pipeline architecture that ingests thousands of rows of structured source data from CSV files and process the data into a business-ready SQL data warehouse.
- Developed well-documented stored procedures with in-built error checking to execute complex SQL queries that populate each layer of the data warehouse with data.
- Github Link

Information Retrieval Project| Python 02/19/2025 - 02/27/2025

- Created a script that parses queries entered by the user and returns relevant documents from a collection of over 1000 documents.
- Used indexing to improve query time and increased document recall using normalization techniques.

S&P 500 Data Warehouse | SQL, Python, PostgreSQL 11/12/2025 - Present

- Built a web scraper to gather source data about all 500 stocks in the S&P 500.
- Designed an ETL pipeline in SQL that inserts the source data using the web scraper into an SQL database, cleans the data, and then merges relevant information together.
- Comprehensive information about stocks in the S&P 500 compiled together from the data warehouse is inserted into a CSV file to be used as a dataset for others who want to make inference on trends in the S&P 500.

MindPilot | Python, OpenCV, Reinforcement Learning 11/2024

- Applied computer vision techniques to allow users with dexterity issues to use computers.
- Worked with novel datasets to create facial recognition software.
- Created a dataset for training a reinforcement learning algorithm to recognize eyebrow movement.
- Presented MindPilot to a group size of over 100 people.
- Devpost Project Link

Grocery Mapper | Python, Pandas, Matplotlib, MecSimCalc 01/6/2024 - 01/07/2024

- Used food pricing data to help users find nearby stores with the best prices.
- Designed ranking algorithm to recommend the best store for users to shop at.
- Displayed insights from pricing data graphically in a visually appealing manner.
- Used the pandas library to convert data from an excel spreadsheet into a dataframe and extracted relevant information from that dataframe to generate plots using matplotlib.
- Github Link

Technical Skills

Languages: Python, SQL, Java , HTML

Frameworks and Libraries: Django, Numpy, Matplotlib, Pandas, Pytorch, scikit learn, statsmodels

Tools: Git, Docker, MSSQL, NoSQL, Databricks, Power BI, Tableau, Excel, Apache, Google Colab, Azure