Mahyar Tajeri

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SUMMARY OF QUALIFICATIONS

- Machine learning experience with Scikit-learn and deep learning experience with PyTorch through coursework including medical data classification and computer vision projects
- Implementing normalized SQL and NoSQL databases, locally and on the cloud with MySQL, Postgres, MongoDB and Firebase, as well as cloud computing with AWS and Firebase
- Multiple years with JavaScript, Java, Rust, SQL, HTML and CSS experience
- Full stack development including building REST APIs with Python, JS, and Rust and front-end user interfaces with frameworks such as Vue and React
- Mobile dev with the Flutter SDK and implementing serverless DB and backends with Firebase

EXPERIENCE AND PROJECTS

ASL letter classification with hang-segmentation preprocessing – Research Project – [Link]

- Used dataset over 200 K instances of ASL letters to create 29 feature classification model (A-Z, space, delete, nothing)
- Applied transfer learning from ResNet18 and YOLOv11 and finetuned to fit our data.
- Created a fast-predicting model (via YOLOv11) with good accuracy in non-noisy environments
- To address noise, implemented hand-segmentation preprocessing to focus on relevant information and create a robust model (via ResNet18) impervious to background noise.
- Discussed strengths and limitations of both methods to provide a comprehensive evaluation of their applicability, effectiveness, and potential trade-offs in an IEEE format research paper.

Heart Failure Data Clustering using Machine Learning - Project - [Link]

- Used data from UCI Machine Learning Repository website to cluster patterns into groups
- Preprocessed data via normalization and reduction for better analysis
- Implemented Principal Component Analysis to reduce dimensionality for clearer interpretation
- Created a K-Means clustering model using Python to separate data records into meaningful clusters (groups) and find relationships between patients with a high risk of heart failure

Software Developer – Environment and Climate Change Canada

- Implemented feature requests for the Government of Canada's weather website (weather.gc.ca) including endpoint creation and graphical interfaces for new representations of data
- Handled the organization of big data by utilizing data manipulation techniques to organize raw data into useful subcategories aligned with business objectives
- Helped manage remote servers and databases through established internal protocols and accepted practices for streamlined testing and production
- Fixed bugs and managed tasks with multiple ticketing systems including Jira and completed testing and review of pull requests through extensive reviews with senior developers
- Created internal tools such functionality testing with Python scripts and updated climate and location data in My-SQL and Postgres.
- Maintained cohesion with team by consistent SCRUM meetings and check-ins with supervisors

Data Analyst - Ministry of Public and Business Service Delivery and Procurement

- Helped manage multiple internal services such as PowerBI reports and usage data
- Collected data and processed it through Azure Data Factory and put into SQL servers Reviewed PowerShell scripts to ensure good coding practices
- Reported on the status of servers through individual testing
- Worked in a team of three for almost every task and helped delegate roles for efficiency

Autonomous Mobile Robot – Project

- Worked in team to construct autonomous robot car to traverse a dynamic obstacle course
- Implemented edge detection, obstacle avoidance, line tracking, and light finding algorithms
- used the Arduino microcontroller to interface ultrasonic sensors, IR sensors, and actuators to navigate the obstacle course and achieve assignment tasks

EDUCATION

Bachelor of Science, Computer Science Co-op (Hons) - Toronto Metropolitan University

- Candidate for Bachelor of Science, 4.22/4.33 CGPA, 3x Dean's List
- Michael Smith Challenge Top 3% Placement x2

RELEVANT COURSEWORK

CPS803 - Machine Learning	MTH719 – Applied Linear Algebra
CPS870 – Applied Natural Language Processing	MTH380 – Probability and Statistics
CPS721 – Introduction to Artificial Intelligence	CPS607- Autonomous Mobile Robotics
MTH814 – Computational Complexity	MTH310 – Calc and Computational Methods II
CPS843 – Introduction to Computer Vision	CPS630 – Web Applications
CPS616 – Algorithms	CPS420 – Discrete Structures
CPS844 – Data Mining	CPS305 – Data Structures
MTH617 – Algebra	CPS509 – Operating Systems