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Education and Certification

McGill University **Sep 2020 - Nov 2023**
MSc Electrical and Computer Engineering ***(Wireless Communication)****; CGPA: 3.8/4.0* *Montreal, Quebec*

SASTRA University **July 2015 - May 2019**
B.Tech Electrical and communication Engineering; CGPA: 8/10 *Thanjavur, India*

The Complete SQL Bootcamp: Go from Zero to Hero **Jan 2024**
Issued by Udemy

Tableau 2022 A-Z: Hands-On Tableau Training for Data Science **Nov 2023**
Issued by Udemy

Technical Skills

Python (NumPy, Scikit-learn, Pandas, PyTorch, Seaborn, Matplotlib), C++, MATLAB, React JS, Graphql, **SQL**, REST API
Software: GNU Radio, LaTex, Wireshark, **Mongo dB**, Github, Ms Excel, Tableau,Looker studio, PostGres, Agile Methodology

Work Experience

Full Stack Developer **Sept 2019 – Aug 2020**
COMCAST *Chennai, India*

- Developed and launched 10+ advanced APIs using GraphQL to enable precise data extraction from MongoDB and SQL databases, thereby boosting network capacity analysis capabilities for field engineers by 10%. Led efforts within an Agile team to optimize database structures, enhancing accessibility and performance for CMTS operations.
- Enhanced field agent **efficiency by 20%** through the implementation of **interactive dashboards** using Material UI, which crucially visualized Access Layer Capacity data. Strengthened cross-functional team collaboration by efficiently resolving Git conflicts, documenting software changes with the QA team, and working closely with POs to refine project requirements.
- Actively contributed to continuous project improvement by engaging in SCRUM meetings and effectively managing tasks using JIRA, playing a key role in the strategic upgrades of Comcast's ECAF application.
- **Skills: React JS, Node JS, Memsql, Knex.js, Graphql, Mongo dB, Agile Methodology**

Academic Experience

Research Associate **Sept 2020 – Aug 2023**
McGill University - Thesis - Channel estimation for IRS-MIMO aided comm. system using EM algo. *Montreal, Quebec*

- Mastered the Expectation Maximization (EM) algorithm to enhance semi-blind channel estimation in MIMO-IRS-aided systems, significantly boosting accuracy at the L1/PHY layer.
- Devised and executed pioneering channel estimation strategies, achieving efficient channel characterization with minimal pilot overhead and enhancing overall system performance. Engineered advanced detectors using digital signal processing expertise, minimizing complexity and optimizing 4-QAM data processing.
- Conducted comprehensive analyses and articulated optimal protocols based on detailed simulation outcomes, driving forward best practices in system design.
- **Skills: Python, MATLAB, and Statistics (Maximum likelihood and EM algorithm).**

Teaching Assistant **Jan 2021 – May 2021**
McGill University - TA for COMP 551 (Applied Machine learning) *Montreal, Quebec*

- Delivered comprehensive coding tutorials on KNN models and decision trees to over 200 students using Python, enhancing practical understanding and application of machine learning concepts.
- Enhanced the learning experience for graduate students in applied ML, receiving multiple commendations for clarity and engagement. Conducted weekly interactive discussions and workshops to resolve doubts and strengthen foundational ML concepts.

Projects

Predictive Modeling for Park Visitation using Real World Weather Data **Apr 2024**

- Conducted initial data cleaning and exploratory data analysis (EDA) to uncover key dataset characteristics, leveraging advanced feature engineering techniques including mutual information regression, SHAP, and decision tree regression to refine critical predictors.
- Developed and optimized a Random Forest model focusing on the top 10 influential features, achieving a robust R-squared score of 83.28%, demonstrating strong predictive accuracy in forecasting park visitations based on weather conditions.
- **Skills: Python - Pandas, Numpy, Scikit, sklearn and Matplotlib.**

AtliQ Hardware Sales Insights **Dec 2023**

- Orchestrated AtliQ Hardware's sales analysis, uncovering Rs.985M revenue, 2.5% profit margin over four years, and a 52.8% revenue contribution from Delhi NCR.
- Enhanced data integrity with MySQL and Tableau, streamlining ETL processes and standardizing currency conversion.
- Conducted detailed customer analysis, identifying Electricalsara Stores as a top contributor with Rs.413M revenue, emphasizing data-driven decision-making and operational efficiency improvements.
- **Skills: MySQL, Tableau, Data Analysis and Data Visualization.**

Multiclass Classification using MultiLayer Perceptron for MNIST Dataset

- Implemented MLP model using Python with batch normalization, SGD optimizer, and L2 regularization, yielding a 97.33 % accuracy. The best parameters for the MLP model with two hidden layers were: 128 neurons in both hidden layers, ReLU activation, learning rate as 0.09, regularization parameter as 0.1, and 35 epochs.
- **Skills: Python - Numpy, Scikit, sklearn and Matplotlib.**