UBC Science Co-op

T: 604.822.9677 | F: 604.822.9676 | science.coop@ubc.ca | www.sciencecoop.ubc.ca

Sohbat Sandhu

Year 4, UBC Statistics Major

sohbatsandhu14@gmail.com 672-513-9481 github.com/sohbatSandhu

TECHNICAL SKILLS

Programming Languages: Java, C/C++, R, Python, DrRacket, PHP, HTML/CSS, SQL
Frameworks and Libraries: JSON, Swing, JUnit, Git, Tidyverse, Tidymodels, NumPy, TensorFlow, Keras, Scikit-Learn
Tools: IntelliJ IDE, Visual Code Studio, GitHub, RStudio, Juypter, DrRacket, Anaconda, MATLAB, Oracle/SQLPlus

PROJECTS

Lingo Exchange: Language Learning Platform (Team Project) **Jan - April 2024**

- Collaborating with team members to design and implement a robust database schema to support various aspects of language learning. Tracked progress by regularly committing changes to the **GitHub** repository
- Utilizing Oracle with **SQLPlus** for DBMS and **PHP** for backend/SQL connection
- Developing **SQL** queries to retrieve and update user information, forum interactions, and learning resources
- Integrating backend DB with frontend **HTML/CSS** and **PHP** for seamless user experience

Bike Rental Counts using Env. & Temp. Factors in Washington DC (Team Project) **Jan - April 2024**

- Collaborated with group members to develop a predictive model to Bike Rental Counts using Major Influencers
- Prepared data for easier visualization and preliminary analysis using **Tidyverse** and resolved multicollinearity issues
- Utilized model selection algorithms, such as Exhaustive Selection, to identify the most influential features using model metrics, such as Adj R^2, Mallow's C_p and BIC.
- Cross validated to observe reduced model accuracy and performed model diagnostics to check model

Prediction Model for Rental Apartments Prices in USA (Team Project) **Sept – Dec 2023**

- Collaborated with group members to develop a predictive model to estimate rental prices using Major Price Influencers
- Prepared data for easier visualization and preliminary analysis using **Tidyverse**
- Utilized model selection algorithms, such as Forward Stepwise Selection, to identify the most influential features and optimized model performance

Vi Disciplina: Workout Schedule Optimizer **Jul – Aug 2023**

- Constructed a **Java** Application that utilizes a user-friendly GUI made using Java **Swing**, in **IntelliJ IDE**
- Implemented a back-end logic to generate personalized workouts with data persistence using **JSON**
- Tested code functionality by debugging and comprehensive testing using **JUnit**
- Tracked progress by regularly committing changes to the **GitHub** repository using **Git**

Statistical Analysis of Impact of Tobacco Usage on Potential Heart Failure Patients (Team Project) **Sep – Dec 2022**

- Collaborated with group members to create a comprehensive and reproducible analysis using **R** in **RStudio** and **Juypter**
- Performed statistical inferencing techniques like Bootstrap Simulation with Confidence Intervals, Hypothesis Testing at 5% significance level and Asymptotic two-sample t-test using **Tidymodels**
- Analyzed observations and derived conclusions using valuable input from team members to assist researchers improve preventive measures for potential heart failure patients

Predictive Analysis of Forest Fires in the Regions of Northwest Algeria (Team Project) **Jan – Apr 2022**

- Collaborated with group members to conduct an analysis that utilizes ML techniques to tackle an environmental issue
- Prepared data for easier visualization and preliminary analysis using **Tidyverse**
- Developed and trained a multivariate classification predictive model using K-nearest Neighbors Algorithm to predict forest fires in Northwest Algeria with over 80% accuracy
- Assisted group members to derive conclusions regarding potential impacts by improving forest fires prediction models

LEADERSHIP AND VOLUNTEER EXPERIENCE

Administrative Assistant **Feb 2019 – 2021**

Post Graduate Institute of Medical Education and Research, Chandigarh, India

- Collaborated with doctors and staff for a community-based project to identify behavioral and nutritional problems in children of single parent families
- Mentored and tutored primary school children in mathematics, English, and science.
- Led a team of staff and volunteers to organize free public health camps to provide health check-ups, dietary supplements and psychological counselling, educational implements, and motivational field trips for over 200 children from 80 villages

CERTIFICATIONS

Advanced Learning Algorithms, DeepLearning.AI, Coursera **Jul 2023**

- Built and trained neural networks with **TensorFlow** to perform multi-class classification
- Used decision trees and tree ensemble methods to produce better predictive performance and efficiency
- Applied best practices to develop models that generalize to the data and tasks in real world

Supervised Machine Learning: Regression and Classifications, DeepLearning.AI, Coursera **Jun 2023**

- Built machine learning models in **Python** using **NumPy** and **Scikit-Learn** libraries
- Built and trained supervised machine learning models for prediction and binary classification tasks, including linear and logistic regression

EDUCATION

University of British Columbia, Vancouver, BC ***Expected May 2026***

Bachelor of Science – Major in Statistics

Dean's Honors List in 2022 and 2024

INTERESTS AND ACTIVITIES

Fitness & Sports | BOLT UBC Member | Data Science Club Member | Fantasy Fiction

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