Khushwant Singh Parmar

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https://github.com/ https://www.ksparmar.com

Technical Experience

Support Analyst - University of British Columbia, Information Technology

- Served as the first point of contact for customers seeking technical assistance over the phone or email
- Provided technical assistance and support on issues related to systems, software and hardware
- Performed remote troubleshooting through diagnostic techniques and pertinent questions

Technical Skills

- **Languages** : Python, C, Java, Javascript, R, SQL, HTML, CSS
- **Libraries:** scikit-learn, scipy, sklearn, Pandas, Numpy, matplotlib.pyplot, React, depmixS4
- **Platforms:** Windows, Linux, Git
- **Environments:** Android Studio, Visual Studio Code, Jupyter, RStudio
- **Technologies:** Microsoft SQL Server, Node.js, Balsamiq, Figma

Projects

Anomaly Detection Based Intrusion Detection **(March 2022 - April 2022)**
(CMPT 318, Introduction to Cyber Security)

- Used Hidden Markov Models in R to detect anomalies in electricity consumption dataset
- Performed PCA using prcomp function to reduce the dimensionality of the dataset
- Used depmixS4 library in R to train and test HMMs for different nstates to achieve optimal log-likelihood and BIC values at nstates= 22
- Successfully detected injected anomalies in sample datasets using final model parameters

Personal Portfolio Website **(December 2021)**

- Used React components to create a portfolio website and deployed using Netlify
- Wrapped using Tailwind CSS, added Google Maps API support, and Netlify forms
- Showcases Android, C and UI/UX projects with videos

Property Prices Analyzer **(July 2021)**
(CMPT 353, Computational Data Science)

- Used Python Data Science libraries to analyze real estate trends for City of Vancouver
- Used sklearn functions to preprocess raw data and regression models(KNN, Random Forest, Gradient Boosting) to predict property price based on location and year built
- Used sklearn classifier models (GaussianNB, KNN, Random Forest) to predict property location based on type of dwelling, price change and current price
- Used scipy.stats to perform statistical analysis on properties based on type and neighbourhood and Mann Whitney U Test to determine if different types of properties had similar price trends

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Projects Continued

LAN Chat Functionality **(November 2020 – December 2020)**
(CMPT 300, Operating Systems)

- Implemented a text chat functionality using UDP sockets in C language
- Used multithreading for handling input, sending, receiving and display of messages
- Used fixed size buffers for storing messages, Mutexes and Conditional Variables for synchronization
- Allowed users on two machines on the same network to connect using port numbers and chat

Music Database **(November 2020 – December 2020)**
(CMPT 354, Database Systems 1)

- Created an SQL Server database to represent data about a fictional music company
- Ensured correct data input, updation and deletion using Triggers
- Allowed user to execute complex queries using Stored Procedures and User Defined Functions for database tables to ensure data consistency

Usability Assessed Interactive Prototype **(July 2020 – August 2020)**
(CMPT 363, User Interface Design)

- Identified critical usability issues and created an interactive prototype for the Canvas mobile app
- Conducted heuristic evaluation with a team of 4 people to detect aspects of UI violating Jakob Nielsen's 10 heuristics
- Utilized Balsamiq to create storyboards based on design scenarios derived from usability research
- Create interactive prototype in Figma incorporating information from visual design essentials, Don Norman's visual design principles, and the C.R.A.P design principles

FindDaMatch **(June 2020 – August 2020)**
(CMPT 276, Introduction to Software Engineering)

- Developed a game using Java in Android Studio to mimic the card game Spot it
- Used Android Canvas to simulate cards with images and text with different number of pictures per card corresponding to different modes
- Used Android View class to implement the draw and discard pile and ViewTreeObserver to track changes on cards in the playfield
- Allowed Flickr API and Emulator local storage access to use custom images on cards

Education

Simon Fraser University, Burnaby, BC **(September 2018 – Present)**

- BSc Computing Science Expected Graduation: April 2024