# Khushwant Singh Parmar

Surrey, BC | 778-513-3081 | ksparmar@sfu.ca
https://github.com/ https://www.ksparmar.com

## Technical Experience

**Software Development Engineer -** Change Healthcare **(September 2022 - April 2023)**

- Developed application software implementing backend services, web services, and client software using C++, C# and Javascript
- Worked on the tactical team implementing bug fixes and addressing customer issues in product
- Packaged product releases and ported fixes among different product versions

**Support Analyst -** University of British Columbia, IT **( May 2022-September 2022)**

- 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, C#, Java, Javascript, TypeScript, R, SQL, HTML, CSS
- **Libraries:** scikit-learn, scipy, sklearn, Pandas, Numpy, matplotlib.pyplot, React, depmixS4
- **Platforms:** Windows, Linux, Git
- **Environments:** Android Studio, Visual Studio, Microsoft TFS, 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

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

- Used Python Data Science libraries to analyze real estate trends for City of Vancouver
- Used sklearn 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

# Khushwant Singh Parmar

ksparmar@sfu.ca

## Projects Continued

**Personal Portfolio Website** **(July 2021)**

- Used React functional 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

**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

**Linux Commands simulation** **(November 2020 – December 2020)**

(CMPT 300, Operating Systems)

- Created a Linux Process Life-Cycle simulation using lists, priority queues and semaphores
- Allowed users to create, fork, kill, get information about and block/unblock processes using commands in Linux terminal
- Enabled inter-process communication using lists as buffers and process priorities to allow concurrent access to buffers
- Simulated the ls command in Linux including ls -i, ls -l , ls -ls, ls -R , ls -r and their combinations

**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