

# Syed Faizan, MD

Scarborough, Ontario • +1 289-885-4110 • faizan.s@northeastern.edu • [linkedin.com/in/drsyedfaizanmd](https://www.linkedin.com/in/drsyedfaizanmd) • [syedfaizaan.com](https://syedfaizaan.com)

**Github:** <https://github.com/SYEDFAIZAN1987>

**Huggingface:** <https://huggingface.co/DrSyedFaizan>

## Graduate Student | Data Analyst | Machine Learning & AI Enthusiast Current GPA: 4.0

Bringing over a decade of experience as a physician, I integrate healthcare domain expertise with advanced skills in data analytics, machine learning, and AI. Currently pursuing a Master's in Data Analytics and Applied Machine Learning at Northeastern University, my special interests include medical imaging analysis, predictive modeling, retrieval augmented generation, and AI-driven decision-making for complex data challenges.

My expertise spans:

- ✓ Data Analysis: Exploratory Data Analysis, Statistical modeling.
- ✓ Machine Learning & Deep Learning: Supervised & Unsupervised Learning, NLP, Computer Vision
- ✓ Big Data & Cloud Technologies: SQL, Python (Pandas, Scikit-Learn, TensorFlow, PyTorch), AWS, Azure
- ✓ Data Visualization & Business Intelligence: Power BI, Tableau, Matplotlib, Seaborn, Plotly, GGPlot

## EDUCATION

### Master's in Data Analysis and Applied Machine Intelligence

Northeastern University • Toronto, Canada • 01/2024 - 12/2025

### M.B.B.S (MD Equivalent, Bachelor Of Medicine and Bachelor Of Surgery)

Rajiv Gandhi University of Health Sciences, Mysore Medical College • Karnataka, India

## PROJECTS

### CommunityServiceBot • 01/2025 - Present

CareFirst

- I developed the evaluation pipeline and tuned the Community Service Chatbot, which is a proprietary AI-driven assistant designed for Carefirst Ontario Services, primarily serving seniors in Toronto.
- The chatbot leverages Giskard for robust Retrieval-Augmented Generation (RAG) evaluation using varied metrics to ensure accuracy and relevancy of responses.

### RAG Enhanced Presentation Platform (REPP) • 11/2024 - 01/2025

United Way Greater Toronto

**Tools & Technologies:** OpenAI GPT-3.5-Turbo API, FAISS, MySQL, Firebase, Streamlit, Power BI

- Developed a web-based application to streamline academic and professional presentations, integrating Retrieval-Augmented Generation (RAG) for interactive AI-supported reports.
- Implemented FAISS for efficient document retrieval and validated performance using the Stanford SQuAD dataset. Future improvements include mobile applications and cloud integration.

### First Aid Tutor • 12/2024 - 01/2025

Mysore Medical College and Research Institute

**Tools & Technologies:** Python, RAG, TF-IDF, Gradio

**Description:** Developed an AI-powered chatbot using Retrieval-Augmented Generation (RAG) to provide first-aid guidance based on medical literature. Evaluated response accuracy using RAGAS metrics and semantic similarity models.

### DiabetesDietBot • 01/2025 - 01/2025

Mysore Medical College and Research Institute

- DiabetesDietBot is an AI-powered chatbot developed by me for Mysore Medical College and Research Institute as part of a research study on how chatbots can assist doctors and medical students in recommending predefined diet plans to patients with Type 2 Diabetes.
- The bot leverages Retrieval-Augmented Generation (RAG), FAISS vector search, and OpenAI's GPT-3.5-turbo to provide personalized diet recommendations based on patient profiles.

### Airbnb Analysis of Short-Term Rentals in NYC

**Tools & Technologies:** R, Python, Tableau, LASSO & Ridge Regression

**Description:** Conducted an in-depth analysis of Airbnb rental trends in NYC using regression models and

statistical analysis. Identified neighborhood and room type impacts on pricing, and developed predictive models to optimize rental strategies. Created Tableau dashboards for interactive visualization.

## Customer Churn Prediction

**Tools & Technologies:** Python, Scikit-learn, SMOTE, Random Forest, Neural Networks

**Description:** Designed and compared machine learning models to predict customer churn, addressing class imbalance using SMOTE. Utilized decision trees, SVMs, and neural networks to optimize predictive performance, achieving an AUC of 0.86 with Random Forest.

## Cost-Benefit Analysis of Dam Construction Projects

**Tools & Technologies:** Excel, Monte Carlo Simulations, Chi-Squared Tests

**Description:** Conducted economic feasibility analysis for two proposed dam projects using simulation-based benefit-cost ratios. Recommended the most viable project based on probability distributions and sensitivity analysis.

## Inventory Management Decision Model

**Tools & Technologies:** Excel, R, Solver, EOQ Model

**Description:** Developed an Economic Order Quantity (EOQ) model for inventory optimization in a manufacturing company. Used Solver to validate results and performed sensitivity analysis to determine cost-effective inventory strategies.

## Maximizing Profit: Optimization Model for Inventory Management

**Tools & Technologies:** Excel, Linear Programming, Sensitivity Analysis

**Description:** Designed a profit-maximizing inventory allocation model for a hardware company expanding into a new region. Conducted sensitivity analysis to optimize inventory levels, budget, and warehouse space allocation.

## Time Series Forecasting of Stock Prices

**Tools & Technologies:** Excel, Exponential Smoothing, Regression Analysis

**Description:** Forecasted Apple Inc. and Honeywell stock prices using time series models. Applied exponential smoothing and weighted moving averages to predict stock trends, optimizing portfolio allocation.

## Transshipment Model and Risk Minimization

**Tools & Technologies:** Excel, Linear Programming

**Description:** Developed a transshipment optimization model to minimize shipping costs and balance supply-demand across warehouses. Conducted risk analysis and cost-effectiveness evaluations using sensitivity analysis.

## Electric Vehicles Market Before Tesla: R Shiny Application

**Tools & Technologies:** R Shiny, Tableau, Data Visualization

**Description:** Built an interactive dashboard to analyze electric vehicle adoption trends, evaluating manufacturer strategies and Clean Alternative Fuel Vehicle (CAFV) incentives.

## Heart Disease Prediction Using SVM

**Tools & Technologies:** Python, SVM, GridSearchCV

**Description:** Developed a predictive model using Support Vector Machines to classify heart disease cases. Achieved 99.03% accuracy with optimized hyperparameters, demonstrating high sensitivity and specificity.

## Investing in Nashville: Predictive Modeling for Real Estate

**Tools & Technologies:** Python, Decision Trees, Random Forest, Gradient Boosting

**Description:** Predicted undervalued and overvalued properties using machine learning models, assisting real estate investors in making data-driven decisions.

## Loan Approval Prediction Using Machine Learning

**Tools & Technologies:** Python, Logistic Regression, Random Forest, XGBoost

**Description:** Built machine learning models to predict loan approvals, optimizing model performance with SMOTE and ensemble techniques.

## Magazine Subscription Behavior Analysis Using Logistic Regression and SVM

**Tools & Technologies:** Python, SVM, GridSearchCV

**Description:** Analyzed customer behavior and marketing campaign effectiveness using predictive models to optimize subscription strategies.

## House Price Prediction Using Linear Regression

**Tools & Technologies:** R, Linear Regression, Feature Engineering

**Description:** Predicted housing prices in Ames, Iowa, using regression models, addressing multicollinearity and optimizing feature selection.

## Analyzing Income Inequality Using KNN

Used Car Sales Analysis

Tools & Technologies: R, Regression Modeling

Description: Analyzed used car pricing trends and key valuation factors using regression models.

WORK EXPERIENCE

Tarsal Education Technologies, Toronto, Ontario, Canada. • Remote • 03/2024 – 12/2024

Data Analyst and Scientific Advisor • Contractor

- Led NLP projects that extracted actionable insights from educational datasets, improving decision-making processes for stakeholders.Prepared project schema, advised on educational content.

Cauvery Hospitals • Hunsur, Karnataka, India • 08/2023 – 12/2023

Resident Physician

- Provided exceptional direct care for 200 patients in Medicine & Gen Surgery, resulting in high patient satisfaction and improved health outcomes.

Department Of Community Medicine • Mysore, Karnataka, India • 04/2022 – 01/2023

Research Assistant

- Successfully collected data from 500+ school children in Mysore District for the General Health Survey, contributing to public health research. Analysed the data for insights and improved efficiency in data collection.

Cactus Communications Pvt Ltd • Remote • 10/2021 – 03/2022

Pharma Regulatory Editor

- Collaborated with cross-functional teams to ensure timely submission of regulatory documents, resulting in successful approval of multiple products and a 95% on-time submission rate.

Elite Nursing Home • Mysore, Karnataka, India • 01/2016 – 12/2020

Family Physician

- Delivered exceptional care to 25 inpatients and 200 outpatients weekly, leading to improved health outcomes and satisfied patients.

Ashwini Clinic • Mysuru, Karnataka, India • 10/2011 – 03/2015

Resident Physician

- Managed primary care for 100 outpatients every week in General Medicine, resulting in improved health outcomes for patients.

K. R. Hospital and Cheluvamba Hospital • Mysuru, Karnataka, India • 09/2010 – 09/2011

Resident Intern

- Hands-on experience in primary and tertiary care settings in 18 different departments of clinical medicine.

PUBLICATIONS

Abhishekh, H. and Faizan, S. (2012)

Australian & New Zealand Journal of Psychiatry

John Cade (1912- 1980), pp.68-69

Faizan, S., Raveesh, B., Ravindra, L. and Sharath,K. (2012)

BMC Proceedings

Pathways to psychiatric care in South India and their socio-demographic and attitudinal correlates.

Faizan, S., Raveesh, B,Anjali, V., Lakshmanagowda Sujatha,R. and Sharath,K. (2012)

BMC Proceedings

The attitude of non-psychiatry doctors to psychiatry and its correlates in Mysore, South India.

ENGLISH COMPETENCE

IELTS General 9/9 Overall Band

IELTS

IELTS Academic 8.5/9 Overall Band

IELTS

SKILLS

AI in Healthcare, Applied Machine Learning, Artificial Intelligence, Clinical Research, Data Analysis, Deep Learning, LaTeX, Machine Learning, Python, R Programming Language, SQL, Statistical Analysis