NEEL SADAFULE

Burnaby, BC   778-522-6302   nsadaful@sfu.ca

npsadafule.vercel.app   github.com/npsadafule

Skills Summary

- **Languages:** Python, SQL, Bash, VB Script
- **Tools:** MS Office, Power BI, Git, Jupyter, Docker, Figma, Power Automate, SharePoint
- **Concepts:** ETL, Feature Engineering, AI/ML, Trend Analysis, Forecasting, Statistical Modeling, Operational Modeling
- **Frameworks/APIs:** Pandas, NumPy, Scikit-learn, Plotly, Dash, Apache Spark
- **Databases:** MySQL, MongoDB
- **Soft Skills:** Communication, Cross functional collaboration, Analytical Thinking, Stakeholder Engagement, Documentation, Reporting

Education

B.Sc. Computing Science, Concentration in Artificial Intelligence   **Jan 2020 – Present**
Simon Fraser University   Burnaby, BC

- **Capstone Research**: Finalist – Canadian Operations Research Society (CORS 2024). Developed a MRP/Physician planning tool adopted by Vancouver Coastal Health for workload forecasting and planning.

Experience

Payment Review and Compliance Analyst (Co-op)   **Sep 2025 – Present**
WorkSafeBC   Richmond, BC

- Automated daily $8K high-dollar payment review preparation using Power Automate Desktop, SQL, Excel and VB Script, replacing PeopleSoft export + manual preparation steps and reducing turnaround from 20–30 minutes to under 5 minutes.
- Built a Python-based rule review pipeline for hearing-aid fitting-fee payments, generating explainable flags for manual follow-up; flagged $32,927 in violations since 2023 requiring correction.
- Conducted high-volume duplicate-payment investigations by validating ILIs against CMS evidence and documenting outcomes; reviewed $197,787.93 and supported recoveries of $71,678.67.
- Performed monthly hearing-aid payment audits using fee schedule rules to flag non-compliant payments; identified $106,982 in potential recovery and summarized findings for tracking.

Data Science & Operations Research Capstone   **Jan 2024 – May 2024**
Vancouver Coastal Health + SFU Big Data Lab   Burnaby, BC

- Analyzed 10,000+ EMRs and engineered features using Python to support descriptive/exploratory analysis for multi-clinic operations planning and reporting.
- Built and validated SimPy simulations to test staffing and appointment-flow scenarios and recommend MRP panel sizes under realistic demand constraints.
- Developed and deployed an interactive FTE calculator using Python, MongoDB and Excel, that estimated the optimal number of required MRP's under varying patient loads and appointment flows.
- Created stakeholder dashboards and presented recommendations in weekly meetings; improved benchmark planning models using mined EMR patterns and operational indicators.

Robotics & Coding Instructor   **Mar 2024 – Sept 2025**
Cloverdale Robotics   Surrey, BC

- Designed and delivered structured lessons in Python, Scratch, and Micro:bit for students aged 6–10, emphasizing logic, problem solving, and hands-on projects that translate concepts into real outcomes.
- Improved instructional consistency by mentoring junior instructors, reviewing weekly reports, and providing feedback on pacing and engagement strategies to strengthen classroom delivery.
- Collaborated with parents to communicate progress using dashboards, aligning expectations and next steps.

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Data Science Projects

AI Chatbot for Data Visualization   Jan 2025 – May 2025
Independent Project   Burnaby, BC

- Built a terminal-based AI assistant using LangChain and OpenAI that translate natural language queries into data queries for Pandas-based data aggregation and Plotly visualizations.
- Designed CLI workflows for stakeholders to visualize trends, generate time-series forecasts, and extract insights from structured data using natural language prompts.
- Engineered prompt interpretation logic, YAML config-based roles, and safe code execution mechanisms using sandboxed 'exec()' calls.
- Simulated real-world consulting use cases in chatbot design by tailoring prompt handling and output formats to different stakeholder personas (e.g., analyst, project lead, QA).

Vancouver Property Analytics   Sep 2024 – Dec 2024
CMPT 353 – Computational Data Science   SFU

- Analyzed over 1.1M property tax records spanning multiple years using PySpark and SQL on HDFS, transforming heterogeneous formats into structured datasets for scalable querying and analysis.
- Performed statistical analysis using ANOVA and Tukey HSD to assess pricing deviations across zoning classifications and isolate high-variance regions.
- Engineered regression models and clustering algorithms to detect patterns and forecast zoning-based pricing trends; used mined insights to inform fraud detection and valuation models.
- Developed interactive dashboards using GeoPandas to visualize geospatial valuation trends, supporting drill-downs by neighborhood and zoning type.

Stock Market Analysis for Personal Stock Portfolio   Dec 2024 – March 2025
Independent Project   Burnaby, BC

- Developed an interactive stock market KPI dashboard to improve my personal investment decisions by analyzing trends in price action, revenue growth, and trading volume for Tesla, Amazon, AMD, and GameStop.
- Used Python libraries (yfinance, requests, BeautifulSoup) to aggregate and clean historical stock data and quarterly earnings from public sources into a unified analysis pipeline.
- Visualized key financial metrics using Plotly to identify consistent revenue momentum, leading to informed trade timing and reduced speculative exposure.
- Achieved a 8.6% return over the quarter by reallocating capital from GameStop to AMD and Amazon based on insights surfaced through the dashboard.

Library Data Platform   Jan 2025 – Apr 2025
CMPT 354 – Database Systems I   SFU

- Designed a BCNF-compliant SQLite database to manage core library functions including borrowing, fines, room bookings, event participation, and membership categorization.
- Built a Python CLI to interact with the database for querying, record editing, fine calculation, and policy-driven logic enforcement.
- Developed SQL triggers to automate penalty enforcement and maintain business rules; validated workflows through edge case testing and scenario simulations.
- Simulated scenarios and produced reproducible testing outputs to demonstrate data integrity, query performance, and system reliability.

Certifications

IBM Data Science Professional Certificate   June 2025
Coursera