RISHABH PABBI

Data Scientist & Computational Researcher | Machine Learning | Healthcare Analytics

Victoria, BC • Mail • LinkedIn • GitHub • Website

SUMMARY

Data Scientist with 3+ years of experience building ML systems in healthcare and government. Researching antibody diffusion in cancer tumor microenvironments at UVic. Delivered patient monitoring systems adopted province-wide and digitization projects impacting millions.

EDUCATION

MSc Statistics   2025 – Present
University of Victoria

BSc Computer Science & Statistics (Double Major)   2022 – 2024
University of Victoria

Associate of Science, Computer Science   2019 – 2021
Langara College

TECHNICAL SKILLS

Languages: Python, R, SQL, Java, C++, Swift, JavaScript
ML & AI: TensorFlow, PyTorch, Scikit-learn, Core ML, Vision Framework, Deep Learning, NLP
Data & Cloud: Power BI, Tableau, Azure, AWS, Docker, Spark, Neo4j, PostgreSQL, MongoDB
Specializations: Computer Vision, Spatial Statistics, Bayesian Inference, Medical Imaging, KDE

PROFESSIONAL SKILLS

Communication: Technical Writing, Research Presentations, Cross-functional Collaboration
Leadership: Project Coordination, Mentorship, Agile Methodologies, Team Collaboration
Research: Scientific Writing, Literature Review, Experimental Design, Data Interpretation

EXPERIENCE

Graduate Research Assistant   Jan 2025 – Present
University of Victoria   Victoria, BC
- **Developing** spatial ML methods to **classify antibody sources** (TIL-B vs systemic) in ovarian cancer TME
- **Implementing** Kernel Density Estimation and **probabilistic models** for source attribution scoring
- **Built** Monte Carlo simulations comparing observed patterns to **theoretical diffusion distributions**
- **Collaborating** with oncologists to translate **predictive model** findings into clinical insights

Healthcare Data Analyst   May – Dec 2023
Providence Health Care   Vancouver, BC
- **Founding team member** of Road to Recovery ($154M initiative); built dashboards tracking **1,500+ patients**
- **Architected** ETL pipelines using SQL and Azure, **automating reporting** and saving clinical staff **15+ hrs/week**
- **Designed** analytics monitoring treatment adherence at St. Paul's Hospital, achieving **1-day median wait**
- **Delivered** production system enabling **data-driven care**; **expanded province-wide** across BC health authorities

Data Analyst Intern   May - Aug 2022
Chandigarh Administration, Government of India   Chandigarh, India
- **Architected** Neo4j graph database modeling **land ownership hierarchies** for Digital India Initiative
- **Developed** Python algorithms **automating extraction** from **50K+ records** with 98% validation accuracy
- **Built** SQL analytics pipelines **optimizing revenue collection**, increasing processing efficiency by **40%**
- **Delivered** solution for Chandigarh region; **scaled to 5+ metro cities**, impacting millions of citizens

PROJECTS

Tumor Microenvironment Analysis System
Python, R, Scikit-learn, Spatial ML, Monte Carlo | Coming to GitHub March 2026
- **Built** ML pipeline to **classify antibody sources** using spatial features and distance-based scoring
- **Implemented** KDE and **Ripley's K-function** for spatial clustering and co-localization analysis
- **Developed** probabilistic models fitting **Exponential, Gamma, and Poisson distributions** for validation
- **Created** interactive dashboards visualizing **model predictions** and source-target attribution maps

BlinkTracker
Swift, Vision Framework, Core ML, SwiftUI | Open Source on GitHub
- **Built** native macOS app using **computer vision** to detect and track blink rate in real-time video
- **Implemented** face detection and **eye landmark tracking** using Apple's Vision framework
- **Developed** blink classification algorithm analyzing **eye aspect ratio** across video frames
- **Engineered** on-device **ML inference pipeline** for privacy-first processing without cloud dependencies

REFERENCES

Dr. Farouk Nathoo
Professor, Department of Mathematics and Statistics, University of Victoria
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Dr. David Goluskin
Associate Professor, Department of Mathematics and Statistics, University of Victoria
goluskin@uvic.ca