VIVEK RAGHUNATHAN

Te Awamutu | 027 373 5559 | vivekraghunathan2@gmail.com | vivekr25.github.io | github.com/vivekr25

PROFESSIONAL SUMMARY

Senior data professional with 7+ years delivering national-scale analytics solutions across healthcare systems. Proven track record building production-ready ML models, end-to-end pipelines, and dashboards deployed country-wide. Self-directed learner recognised for translating complex technical insights into measurable business value and driving data-driven decision-making at scale.

PROFESSIONAL EXPERIENCE

Senior Data Scientist

Health New Zealand – Te Whatu Ora | Hamilton | Jan 2024 – Present

- Designed and deployed national forecasting dashboard (Follow-Up:FSA ratio) used across all Health NZ regions and districts, providing country-wide visibility into demand vs. capacity metrics for hospital planning and resource allocation
- Partnered with operational leaders to integrate predictive models and advanced analytics frameworks into planning processes while navigating organisational constraints on technical implementation

Intelligence & Insights Business Partner - Nursing

Health New Zealand – Te Whatu Ora | Hamilton | Jan 2022 – Dec 2023

- Built and deployed Capacity at a Glance (CaaG) dashboard implemented district-wide across Waikato, delivering real-time staff-to-patient ratio visibility to bed managers and operations teams for immediate resource allocation decisions
- Developed and maintained automated data pipelines powering national reporting dashboards, ensuring data quality and integration across multiple sources while producing actionable insights that improved cost efficiency and service delivery

Data Analyst – OPR & AH

Waikato District Health Board | Hamilton | Sep 2018 – Dec 2021

- Led end-to-end automation of funding-stream reporting for Medically Fragile Children programme, replacing paper-based processes with digital pipelines and analytics – reducing manual workload by 70% and improving reporting transparency
- Analysed demand and utilisation trends across ED attendances, theatre usage, and service interventions while delivering equity-focused analytics to support iwi and community health outcomes aligned with Te Tiriti o Waitangi commitments

Admin Support – OPR & AH

Waikato District Health Board | Hamilton | Nov 2015 – Sep 2018

- Maintained assessment datasets and produced routine/ad-hoc reports to support clinical operations while building foundational data capture processes that evolved into comprehensive analytical solutions

DATA SCIENCE PROJECTS

ALAN NZ: Environment × Health – *Streamlit*

Interactive Streamlit app exploring intersections between environmental factors (night-time light pollution, air quality) and health equity patterns across Aotearoa New Zealand using geospatial analysis and advanced visualisations.

🔗 **Live App** | 💻 **GitHub**

Heart Disease Predictor – *Logistic Regression with SHAP Explainability*

Production-ready ML web app predicting heart disease risk using logistic regression with SHAP explainability. Deployed via Flask on Render with interactive UI and CI/CD integration.

🔗 **Live Demo** | 💻 **GitHub**

Diabetes Risk Predictor – *XGBoost with Hyperparameter Tuning*

Feature-engineered XGBoost model assessing diabetes risk from health indicators (BMI, physical activity, general health). Includes hyperparameter optimisation and Flask deployment on Render.

🔗 **Live Demo** | 💻 **GitHub**

Stroke Risk Predictor – *ML with SMOTE for Class Imbalance*

ML app predicting stroke risk with emphasis on class imbalance handling using SMOTE. Features explainable AI components and deployed via Flask with interactive UI.

🔗 **Live Demo** | 💻 **GitHub**

TECHNICAL SKILLS

Languages: SQL, Python (pandas, numpy, scikit-learn, XGBoost, matplotlib, seaborn, Plotly)

Tools & Platforms: Power BI, Qlik Sense, SQL Server, Git/GitHub, Streamlit, Flask, Render, Excel (Advanced)

Methodologies: Predictive modelling, machine learning, explainable AI (SHAP), scenario analysis, demand forecasting, pipeline automation, feature engineering, hyperparameter tuning, class imbalance handling (SMOTE), A/B testing

LEADERSHIP & COMMUNITY ENGAGEMENT

Data Literacy Advocate

- Trained school students in data fundamentals and statistics, designing engaging lessons that simplified technical concepts into age-appropriate examples with interactive activities
- Fostered analytical thinking and data literacy in younger generations, inspiring curiosity about evidence-based decision-making and data-related career pathways

Mentorship & Community Leadership

- Guided junior analysts in data modelling, Power BI, and Qlik while leading community groups and coordinating events focused on building analytical capabilities

References available upon request