Minh Nguyen

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Nationality: Australian, Vietnamese
Languages: English (fluent), Vietnamese (native)

Current position

Data Scientist, Sedgwick, Brisbane, QLD

Skills

Geospatial & Location Intelligence: geospatial feature engineering, spatial data analysis, location-based risk modelling, proximity analysis, GeoPandas, MapInfo (GIS software), coordinate systems and projections

Machine Learning & Data Science: Keras, Matplotlib, NumPy, Pandas, PyTorch, Scikit-Learn, TensorFlow, XGBoost, Dataiku (AutoML), ensemble methods, GLMs, statistical learning, time series forecasting

Programming: Python, R, SQL, MATLAB, SAS, DAX, LaTeX

Cloud & Data Platforms: Google Cloud Platform, Vertex AI, Azure DevOps, Snowflake, SQL Server, HEX

Business Intelligence & Visualisation: Power BI, SSRS, dashboard development, data visualisation, geospatial mapping

Mathematical Foundations: statistical modelling, probabilistic models, stochastic processes, numerical linear algebra, computational mathematics

Development Tools: Jupyter Notebook, VS Code, Git, GitHub, Jira, Confluence

AI Tools & NLP: LlamaIndex framework, Claude, Cursor, OpenSpec, Model Context Protocol (MCP), large language models

Work experience

Sep 2024 – **Data Scientist for *Sedgwick*, Brisbane, Australia**
Duties:

- Designed and developed a geospatial catastrophe claims prediction system using gradient boosting models (LightGBM/XGBoost) to forecast postcode-level claim volumes from multiple prediction horizons (day 1, 7, 14), integrating BOM weather observations, ABS population data, Geoscience Australia terrain features (DEM, slope), and ICA catastrophe data for validation
- Engineered automated weather-driven affected area detection using calibrated rainfall and windspeed thresholds validated against historical events, achieving 95%+ recall for identifying impacted postcodes across multiple catastrophe types (storms, floods, cyclones, bushfires)
- Implemented spatial interpolation methods to aggregate point-based weather station observations to postcode-level predictions, enabling geographic intelligence for resource allocation and capacity planning
- Built comprehensive feature engineering pipeline creating predictive features including meteorological variables (rainfall accumulation, peak intensity, wind gust), exposure metrics (population density, dwelling counts), terrain characteristics (elevation, catchment analysis), and spatial lag features capturing spatial autocorrelation patterns
- Conducted market share analysis using industry-wide claims data to benchmark model predictions and validate predictive accuracy against authoritative external sources, establishing credibility for operational deployment
- Developed data ingestion pipelines integrating multiple data sources (BOM, ABS census data, Digital Earth Australia satellite products) with internal claims databases, handling data quality validation and multi-source reconciliation challenges
- Built and maintained real-time dashboards, scheduled reports, and ad-hoc analysis reports using Python, Power BI, and SSRS to track catastrophe events and business-as-usual metrics, enabling data-driven decision-making for stakeholders
- Authored comprehensive technical proposal documenting model architecture, data sources, validation framework, and phased implementation strategy, securing stakeholder approval for 6–9 month development timeline with early value delivery at 5–6 months
- Provided technical support and guidance to junior data scientists and data analysts on ad-hoc + analysis requests and data-related challenges

Feb 2022 – Sep 2024 **Pricing Analyst for *Auto & General Insurance Holdings Pty Ltd*, Toowong, Brisbane, Australia**
Duties:

- Developed and maintained generalised linear models (GLMs) for motor insurance pricing, incorporating geospatial variables, driving behaviour metrics, and vehicle characteristics to optimise risk-based premium accuracy

- Performed exploratory data analysis using LightGBM models and SHAP values to identify key feature importances and interaction effects, informing feature engineering and variable selection for production GLMs
- Designed and analysed A/B tests to evaluate pricing strategy changes, measuring impact on conversion rates, portfolio profitability, and customer retention across different market segments
- Built automated data pipelines using Python and SQL for extracting, transforming, and validating large-scale insurance data from multiple sources, reducing manual processing time and improving data quality
- Conducted rate change analysis and financial forecasting to support business planning, presenting recommendations to senior leadership on pricing adjustments and market positioning

Nov 2021 – Feb 2022

Pricing Intern for *Auto & General Insurance Holdings Pty Ltd*, Toowong, Brisbane, Australia

Duties:

- Developed a predictive statistical model analysing the impact of geospatial variables from mobility data on motor insurance claim frequency and severity, improving risk evaluation and enabling more accurate risk-based premium pricing
- Performed data wrangling, validation, and quality assurance on external geospatial datasets, including location-based mobility patterns and road network characteristics
- Conducted statistical analysis using Python and R to quantify the relationship between geographic risk factors (e.g., traffic density, road types, urban vs. regional areas) and claims experience
- Presented findings to pricing team leadership, demonstrating the value of incorporating geospatial features into actuarial pricing models

Feb 2021 – Nov 2021

Teaching Assistant, University of Queensland, St Lucia, Australia

Courses:

- STAT1201 *Analysis of Scientific Data*
- COSC2500 *Numerical Methods in Computational Science*
- STAT2004 *Statistical Modelling & Analysis*
- STAT3500 *Problems & Applications in Modern Statistics*

Duties:

- Conducting tutorials and practicals
- Providing technical and IT support for online and on-campus lectures
- Monitoring Zoom chats during lectures
- Offering academic support to first and second-year students
- Marking assessments and assignments

Education

2023 – **(MDataSc) Master of Data Science, University of Queensland, St Lucia, Australia**
Ongoing.
Courses completed:

- DATA7002 Responsible Data Science
- INFS7203 Data Mining
- COMP4703 Natural Language Processing

(BMath) Bachelor of Mathematics with Statistics major, University of Queensland, St Lucia, Australia
GPA 6.6/7. Completed.
Selected courses:

- STAT3004 Probabilistic Models & Stochastic Processes (High Distinction)
- STAT3006 Statistical Learning (High Distinction)
- STAT3500 Modern Statistics (High Distinction)
- MATH3204 Numerical Linear Algebra & Optimisation (High Distinction)
- MATH3201 Advanced Scientific Computing (High Distinction)
- COSC3000 Visualization & Graphics (High Distinction)
- CSSE1001 Software Engineering (Distinction)

Scholarships & awards

2021 UQ School of Maths and Physics Summer Industry Experience Award (approximately $3000), University of Queensland, St Lucia, Australia
2021 Dean's Commendation for Academic Excellence, University of Queensland, St Lucia, Australia
2020 Dean's Commendation for Academic Excellence, University of Queensland, St Lucia, Australia
2018 Dean's Commendation for Academic Excellence, University of Queensland, St Lucia, Australia
2018 – 2020 UQ Link Scholarship ($9000), University of Queensland, St Lucia, Australia

Conferences, talks & workshops

2025 **Attendee at CDAO Conference, Brisbane, Australia (link)**
Participated in discussions regarding timely and trending insights on governance, generative AI, machine learning, and data leadership strategies.

2022 **Participant in CPD151, Machine Learning with Python Workshop, hosted by the Statistical Society of Australia, Online (link)**
Engaged in a two-day intensive workshop tailored for data scientists, focusing on the construction of machine learning models within production-oriented workflow frameworks.

2022 **Invited Presenter at the SMP Summer Industry Experience Showcase 2021–2022, University of Queensland, St Lucia, Australia**

Selected to present my summer industrial project during a showcasing event organised by the University of Queensland's School of Mathematics and Physics. Presented to an audience comprising academic staff, students, and industry collaborators.

2019 **Attendee at BAM2019, Biarri Applied Mathematics Conference, Brisbane, Australia (link)**
Participated in a multidisciplinary conference centred on mathematical modelling, statistical analyses, optimisation methods, and machine learning applications aimed at elevating business intelligence and industrial automation.

Affiliations

2021 – 2023 Student Member of the Statistical Society of Australia (SSA) (link)
2020 – 2023 Member of the University of Queensland's Mathematics Students Society (MSS) (link)
2024 Member of the Women in Technology Organisation (WiT) (link)