Khanh Nguyen (Alex) Bui

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OBJECTIVE: A dedicated Business Analytics and Data Science student with strong analytical thinking and problem-solving skills. Seeking opportunities to apply statistical modeling, predictive analytics, and data-driven insights to business challenges.

EDUCATION

Bachelor of Commerce (Business Analytics and Data Science)   Feb 2024 - July 2026
The University of Sydney   **Grade:** Distinction

- Relevant Topics: Statistical Modeling, Integer/Non-Integer Optimization, Dynamic Programming, Stochastic Processes, Bayesian Inferences, Generalized Linear Model, Time-series Analysis

SKILLS & INTEREST

Technial Skills: Python, R, SQL, LaTeX, Quarto Document, Git.
Academic Interest: Time Series Analysis, Portofolio Optimization, Machine Learning, Option Pricing.
Other Interests: Golf, Photography, Poker.

TECHNICAL PROJECTS

Australian CPI Forecasting   2025

- Developed an ARIMA forecasting pipeline for Australian CPI data using Python, Statsmodels, and Pandas.
- Implemented exhaustive grid search with expanding window cross-validation to identify optimal hyperparameters.
- Surpassed baseline model performance by reducing Mean Squared Error (MSE) through out-of-sample validation.
- **Tools Used: Python** (Statsmodels, Pandas, Scikit-learn, Matplotlib, Seaborn), Quarto, GitHub Pages
- **Technical Skills:** Time Series Modeling, Expanding Window Cross-Validation, Data Visualization.

Market Regime Detection & Forecasting   2025

- Fetched market data using Quantmod and wrote scripts to resolve timezone-related date errors.
- Applied Hidden Markov Models within a GJR-GARCH framework to forecast volatility and identify distinct market stress regimes.
- Selected Skewed Student-t distributions to accurately model 'fat tails' and asymmetry in market data.
- Reduced MSE by 1.35% against single-regime benchmarks via parallelized expanding window cross-validation.
- **Tools Used: R** (MSGARCH, Quantmod, Tidyverse, doParallel, Plotly), Quarto
- **Technical Skills:** Volatility Modeling, Hidden Markov Models, Parallel Computing.

EXPERIENCE

Receptionist   May 2025 - September 2025
BeBee Co-Working Space - HCMC, Vietnam

- Meeting and greeting up to 200+ guests daily to ensure they received a warm and friendly welcome
- Taking time to understand the needs of each visitors and offering them additional information to enjoy
- Keeping accurate records on check-ins and maintaining data confidentiality
- Working as part of a team of 5 and motivating others whenever possible

Waiter   May 2024 - September 2024
Ngon 138 Restaurant - HCMC, Vietnam

- Served customers and addressed complaints to improve customer service
- Developed good verbal communication skills engaging with a manager and kitchen staff to stay up-to-date on supply availability
- Developed time management skills to minimize customer wait times

Full-time Junior Golfer   **June 2019- December 2021**

MMG Performance- Orlando, Florida

- Trained with world-class coaches and competed in various junior tournment.
- Achieved the best personal ranking of 7th in Disney Summer Junior Open (+10 over two rounds)
- Developed self discipline through training and mental toughness through competition.