Joseph Glasson

josephglasson.aus@gmail.com | linkedin.com/in/josephglasson | github.com/8301Joseph

Education

Duke University **Expected graduation: May 2028**

Double Major in Mathematics and Computer Science, Minor in Decision Science **GPA: 3.8/4.0**

- Earned ACC Champion, ACC Academic Team, ACC Honour Roll and Duke Fencing MVP honours; participated in Duke Applied ML and Duke Quantitative Finance

Work Experience

Duke University **Jan 2026 – Present**

Machine Learning Research Assistant

- Worked with Professor Scott de Marchi on model selection and interpretability; compared linear, polynomial and cross-validated Lasso regression, cutting test RMSE by 40%
- Performed exploratory data analysis and built a logistic regression pipeline on clinical healthcare data (84% test accuracy); applied PCA
- Conducted self-directed AI safety study: built an autograd engine (micrograd) from scratch, verified against PyTorch

Quantworks **May – Sep 2025**

AI Project Engineer Intern

- Built an AI career-platform prototype for an education platform serving 7,000+ users; designed LLM pipelines for personalized evaluations and recommendations
- Analyzed competitor and user data to inform product decisions and roadmap
- Translated technical work into clear terms for non-technical stakeholders and presented it in meetings

Creator's Lounge **Jan 2022 – Feb 2024**

Founder | Manager

- Built and scaled an online community centred around content creation to 30,000+ users
- Generated up to $5,000/month via data-driven pricing; automated transaction and reporting workflows with Python

Duke Division I Fencing | Australia Fencing Federation **Jun 2022 – Present**

Division I Student Athlete | National Team Member

- Won Australia's first U20 World Cup; #1 ranked Australian fencer; 2024 Paris Olympic Qualifiers; 24th at Open Worlds
- Selected for Athlete Leadership Program for performance, discipline, and decision-making under pressure

Projects

Language-Learner Segmentation (Duolingo Take-Home) | Python, pandas, stepmix **Nov 2026**

- Segmented 5,955 survey respondents into 6 learner personas with latent class analysis, validated by bootstrap stability testing (ARI 0.54)
- Showed the top persona had 2.3x the odds of paying after controlling for country, platform and tenure; delivered a 2-page report with product recommendations

AFL Forecasting & Market Comparison Model (prooty.site) | Python, pandas, scikit-learn **Mar 2026 – Present**

- Built and deployed an automated probabilistic AFL forecasting pipeline: Ridge regression on Elo, opponent-adjusted scoring and home advantage
- Backtested walk-forward over 566 matches (Brier 0.194 vs. 0.244 home-team baseline); matched bookmaker lines within 0.005 Brier

Polymarket Calibration Study (Pre-registered) | Python, REST APIs, matplotlib **Oct 2026**

- Built a Polymarket API pipeline covering 181,214 resolved markets; sampled 3,000 politics and sports markets
- Found prices well calibrated (Brier ≈0.15 vs. 0.25) across 5,231 snapshots; no favourite-longshot bias after trading costs
- Pre-registered study design; published analysis code on GitHub; authored the research paper

Skills & Interests

Technical Skills: Python (pandas, NumPy, matplotlib, scikit-learn, PyTorch, XGBoost, TensorFlow), R, Excel, VBA, Java, Git
Relevant Coursework: Probability, Regression Theory, Machine Learning, Linear Algebra, DSA, Software Design & Development