# Harry Zhong

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## EDUCATION

**Curtin University**                                                                                   Bentley, WA
*Bachelor of Science (Actuarial Science) (Honours), CWA: 84%*                        *Feb 2019 – Jun 2023*

**Actuaries Institute**                                                                                   Perth, WA
*Actuary Program (AIAA)*                                                                      *Jul 2023 – Oct 2023*

## EXPERIENCE

**Data Analyst**                                                                             Nov 2022 – Present
*EBM Insurance & Risk*                                                                             *Perth, WA*

- Gained a strong understanding of data analysis principles (relational databases, query languages, modelling) and applied them to a broad range of financial and insurance applications (financial reporting, scenario analysis, cashflow projection).
- **Development**: Contributed to income forecast project which used statistical techniques in *R* to predict future income for financial reporting. Key contributor to the internal development of data analysis applications using *SQL* and *R*. Introduced the use of *Shiny* applications for data visualisation, and *Git* for version control.
- **Automation**: Delivered monthly income reports using *VBA* to automate repetitive tasks, resulting in a 70% reduction in report generation time. Implemented *Microsoft365R* and *SQL* to fully automate distribution of scheduled reports, resulting in a 50% increase in efficiency.
- **Reporting**: Conducted ad hoc data analysis based on stakeholder needs. Modelled annual income of client portfolios in *Microsoft Excel* for discounted cash flow valuations.

## PROJECTS

**Gender Prediction - PyTorch** ⬀ | *Python, PyTorch*                                                 2024

- Used PyTorch to define and implement custom residual neural network used to classify facial features using the CelebA dataset.
- Tuned hyperparameters (batch size, kernel sizes, and layer composition) to optimise convergence speed and loss measure.
- Achieved 95% accuracy in training and testing splits of dataset.
- Published code and results on personal website.

**Spotify Track Clustering** ⬀ | *R, Spotify API*                                                      2024

- Used R to extract Spotify streaming history along with Spotify's developer API to query track features.
- Used Spotify track features to apply k-means clustering algorithm to tracks in streaming history.
- Implemented brute force method of feature selection and parallel processing to optimise computation time.
- Visualised clustering results and streaming trends using Shiny applications.
- Published code, results, and interactive Shiny applications on personal website.

**Messenger Chat Clustering - Gensim LDA** ⬀ | *Python, Gensim*                                        2024

- Used Python to extract Facebook Messenger chat data stored as JSON files.
- Implemented latent Dirichlet allocation (LDA) using *gensim*.
- Tuned the 3 hyperparameters of LDA using coherence score as a measure of model performance.

**Honours Dissertation - Stochastic Volatility** ⬀ | *R*                                               2023

- Used stochastic modelling to compare constant and stochastic volatility under geometric Brownian motion based on independent research.
- Used R to optimise parameterisation and simulation via parallel processing.
- Completed written research report and presented seminar presentation to supervisors.

## TECHNICAL SKILLS

**Languages**: R, Python, SQL, Visual Basic
**Software**: Excel, Power BI
**Developer Tools**: Git, GitHub, VS Code, R Studio
**Libraries (R)**: ggplot2, dplyr, tidyr, purrr
**Libraries (Python)**: pandas, NumPy, Matplotlib, PyTorch