

# Harry Chang

Portfolio: [harrychangjr.streamlit.app](https://harrychangjr.streamlit.app)

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## EDUCATION

- National University of Singapore** Singapore  
*Bachelor of Science - Data Science and Analytics* Aug 2020 - May 2024 (Expected)  
*Coursework:* Convex Optimization, Data Science in Practice, Data Structures and Algorithms, Data Visualization, Database Technology and Management, Linear Algebra, Multivariable Calculus, Optimization for Large-Scale Data-Driven Inference, Probability, Regression Analysis, Statistical Learning

## SKILLS

- Languages:** R, Python, SQL, Java, Stata, MATLAB
- Machine Learning:** Scikit, NLTK, TensorFlow, Keras, JAX
- Cloud and Database Systems:** MySQL, PostgreSQL, SQLite, BigQuery, GCP, AWS, Git, Docker
- Data Visualization:** Numpy, Pandas, Matplotlib, Seaborn, ggplot2, Folium, Tableau, Power BI, Domo, Gephi
- Design and Front-End:** Figma, Canva, Streamlit, HTML, CSS
- Miscellaneous:** Microsoft Office, Retool, Google Ads, Google Analytics

## EXPERIENCE

- Sephora** Singapore  
*Product Data Analyst Intern* Jun 2023 - Dec 2023 (Expected)
  - Database Queries:** Built, documented and hosted SQL queries and processes to enable reproducible and effective pipelines, analysis and dashboards using BigQuery
  - Data Visualization:** Utilised Domo to create dataflows and visualizations that provide quick insights into product health and performance of e-commerce features (web and mobile)
  - A/B Testing:** Implemented A/B testing to measure potency of new e-commerce features before reporting results
- Quest** Singapore  
*Marketing Intern* Apr 2023 - Jun 2023 (Expected)
  - Marketing Analytics:** Built custom TikTok Analytics dashboard using Python, Streamlit, NLTK, Plotly to assess virality of trending company TikTok videos for each week using hashtag analysis. Currently exploring methods to link findings to user conversion and acquisition rates of mobile application from App Store and Play Store
  - Search Engine Optimization:** Analysed performance of various marketing-related keywords using Google Ads to decrease bounce rate of company's website and increase landing page visits
  - Content Creation:** Brainstormed various content ideas to meet company's KPI of three TikToks per week for consistent user engagement with followers
- SCOR** Singapore  
*Actuarial Intern* May 2022 - Aug 2022
  - Actuarial Analysis:** Performed actuarial analysis of reinsurance treaties in various APAC markets, including entry of client portfolio and loss data into xAct (treaty pricing system)
  - Insurance Market Databases:** Regularly updated and analysed risk profiles and claims databases for insurance markets in Pakistan, Thailand and Vietnam
  - Credit Product Pricing:** Trained machine learning models (logistic regression, random forest) to predict insurance claims, with an average accuracy of 80% for each model
- Quest** Singapore  
*Data Analytics Intern* Feb 2022 - May 2022
  - Product Analytics:** Conducted cohort analysis to optimise user acquisition and retention rates
  - Growth Analytics:** Collected, analysed and interpreted trends within user data to improve company's growth and marketing strategies
  - Dashboard Processes:** Built visualizations and dashboards using RStudio and Tableau to report monthly key metrics of company's mobile application
- Immigration@SG LLP** Singapore  
*Data Migration Intern* Oct 2020 - Jan 2021
  - Data Cleaning:** Performed data cleaning of over 30,000 records using Excel and Pandas in Python to facilitate smooth data migration into new customer relationship management (CRM) systems
  - Customer Segmentation:** Derived customer segmentation models using machine learning techniques (regression, decision trees, market basket analysis) to improve company's marketing strategies
  - Time Series Analysis:** Completed time series analysis using past sales data to forecast future monthly revenue

## PROJECTS

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- **Enhanced TikTok Analytics Dashboard:** (Work in progress) Open-source dashboard for TikTok users to analyse performance (views, shares, likes & comments) of videos using hashtag analysis. Tech: Python, Streamlit, NLTK, Gensim, Plotly, Matplotlib & Seaborn. (May '23)
- **Optimising Article Quality with ChatGPT and Natural Language Processing:** Evaluated performance of ChatGPT in improving original write-ups of science news articles using NLP methods. Tech: Python, Streamlit, NLTK, Textstat & Matplotlib. (May '23)
- **Statistical Learning: Analysis on Video Game Sales:** Utilised various regression methods (random forest, XGBoost) and linear mixed-effects model to investigate effects of predictors in predicting global sales. Tech: R (Apr '23)
- **Statistical Learning: Nourish Your Body with Data:** Built matrix-factorisation based recommendation system to suggest healthier alternatives for grocery shoppers with varying demographics Tech: R, Python, Streamlit (Apr '23)
- **Data Science Project on Biopics Dataset from Kaggle:** Built content-based recommendation system using cosine similarity to recommend similar movies based on input title. Tech: Python, R. (Apr '23)
- **Optimisation for Large-Scale Data-Driven Inference: Word Embedding:** Trained Word2Vec model on 20 Newsgroups dataset from scikit-learn package in Python, which provides a number of similar words based on input word. Also evaluated usefulness of model by applying sentiment analysis (86.4% accuracy). Tech: Python, NLTK, Word2Vec, Scikit-Learn. (Mar '23)
- **Optimisation for Large-Scale Data-Driven Inference: Anime Recommendation System:** Built content-based and matrix factorisation-based recommendation systems to recommend similar anime series based on input title while minimising MSE. Tech: Python. (Mar '23)

## COMPETITIONS AND AWARDS

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- Theme Best (Safety) and First Runner Up (Overall) out of 117 team submissions at NUS LifeHack 2022 - July, 2022
- First Runner Up at NUS Fintech Month Hackathon 2021 - January, 2021
- SMU-LIT (Legal-in-Tech) Hackathon 2021 - July, 2021
- NUS Economics Case Competition 2021 - June, 2021
- Shopee Product and Design Challenge 2021 - December, 2020
- Singapore Business Case Competition 2020 - October, 2020

## ACTIVITIES

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- **Co-founder and Publicity Head, NUS Product Club** Singapore  
*Spearheaded logo design and crafted publicity materials to promote outreach of new club* Apr 2023 - Apr 2024
- **President, NUS Statistics and Data Science Society** Singapore  
*Oversaw efforts of 56 club members in organising events and technical workshops* May 2022 - Nov 2022
- **Track and Field (Science) Captain, NUS Inter-Faculty Games** Singapore  
*Led and trained 24 runners for track relay events (4x100m, 4x200m, 4x400m)* May 2022 - Aug 2022
- **Publicity Executive, NUS Inter-Faculty Games** Singapore  
*Increased publicity of event through extended outreach to over 5,000 students* Feb 2022 - May 2022
- **Deputy Head of Finance, Google Developer Student Clubs NUS** Singapore  
*Compiled team budgets to ensure sufficient funding for workshops and hackathon* Sep 2021 - Apr 2022
- **Marketing Director, NUS Statistics and Data Science Society** Singapore  
*Secured \$19,000 worth of sponsorships for 850 students in Data Analytics Competition* May 2021 - Apr 2022
- **Volunteer Management Co-head, Project Safe Space** Singapore  
*Managed welfare of volunteers while planning recreational activities at Anglican Care Centre* Mar 2021 - Jul 2021
- **Public Relations Executive, NUS Open Day Student Village** Singapore  
*Liaised with participating bodies to increase awareness of event to prospective students* Jan 2021 - Mar 2021