

Renée Lu

Data Analyst | Quantum

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RELEVANT EXPERIENCE

Data Analyst

Quantium

Aug 2023 - Present

- Produced analytics (**SQL**) for an automated **campaign reporting tool** for a major media client.
- Designed and implemented an **automated data ingestion pipeline** (Python & SQL), reducing manual data steps for monthly deliverables by **90%**, streamlining data acquisition, and ensuring data integrity.

Graduate Data Analyst

Quantium

Aug 2022 - Aug 2023

- Delivered an **analytics product** to generate workforce optimisation recommendations to senior stakeholders for use in a major retailer's distribution centres, with a run-rate benefit of **\$4.7 million**.
- Designed and implemented the expansion of the optimisation algorithm for a new retail division, through **data feasibility analysis (Python & SQL)**, and refactoring data engineering pipelines (Python on Google Cloud).
- **Automated testing (SQL)** and built **dashboards** (Google Cloud Platform) to monitor and provide insights into algorithm outputs.
- **Collaborated with SMEs** to build performance metrics and new data assets in the data warehouse through ETL (SQL).

Research Assistant - Machine Learning

UNSW Faculty of Engineering

Jul 2021 - Nov 2021

- Developed novel methods for anomaly detection at 3 SATCOM network sites, analysing **petabytes** of data using **machine learning** and signal processing algorithms in Matlab.
- Conducted literature reviews and **reported insights** to Defence Science and Technology Group.

Research Scholar - Deep Learning

UNSW Faculty of Engineering

Dec 2019 - Apr 2020

- Trained **deep neural networks** for non-native children's speech recognition and placed **2nd** in INTERSPEECH 2020 Special Session.
- Performed data cleaning and **data wrangling (Python)** on **400+ hours** of children's speech data (on the largest children's speech dataset).

Data Analyst

Red Marker

Dec 2018 - Mar 2020

- **Provided recommendations** to **C-suite executives** on the prioritisation of product features, using insights generated by data analysis (**SQL & Python**).

ADDITIONAL EXPERIENCE

Economics Tutor

UNSW Business School

Feb 2020 - May 2022

- Devised weekly learning material and provided academic support for classes in Microeconomics 1&2 (ECON1101, ECON2101) and Macroeconomics (ECON1102).

EDUCATION

Bachelor of Engineering (Honours) /
Bachelor of Commerce

University of New South Wales

2017 - 2022

Majors: Electrical Engineering, Economics

Thesis: *Improving Children's Speech Recognition by Fine-tuning Self-supervised Adult Speech Representations*

Awards:

- High Distinction WAM: **86.2** / 100
- Vida Balshaw Women in Engineering Scholarship (2017 - 2020)
- Taste of Research Scholarship (2019)
- Women in Engineering Head-Start Award (2017)

Extracurriculars:

- Executive position at: UNSW Women in Technology Society
- Subcommittee positions at: UNSW Save the Children, UNSW Mathematics Society, UNSW Engineering Society.
- Volunteered for UNSW Women in Engineering at workshops and events.
- Participated in outreach as an Engineering Ambassador for the Faculty of Engineering.

PUBLICATIONS

Improving Children's Speech Recognition by Fine-tuning Self-supervised Adult Speech Representations
arXiv, 2022

- Achieved **82.8% accuracy** on automatic speech recognition for children, and 46.08% improvement compared to state-of-the-art adult speech recognition models.

UNSW System Description for the Shared Task on Automatic Speech Recognition for Non-Native Children's Speech
INTERSPEECH, 2020

- Achieved **83.4% accuracy** on automatic speech recognition for non-native children.

RELEVANT SKILLS

Technical: SQL / BigQuery, Python, Git
Platforms: Google Cloud, Snowflake