

Renée Lu

Data Analyst | Quantum

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RELEVANT EXPERIENCE

Data Analyst

Quantum

Aug 2022 - Present

- Delivered an **analytics product** to generate workforce optimisation recommendations to senior stakeholders for use in a major retailer's distribution centres, with a total benefit of **\$1.5 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).
- Wrote automated testing scripts (**SQL**) and built dashboards 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.

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

Electrical Engineering Intern

ResMed

Dec 2020 - Jun 2021

- Liaised with suppliers for project management of power supplies.
- Conducted hardware testing and technical product documentation.

Platform Engineering Intern

Deloitte

Nov 2020 - Dec 2020

- Built a MuleSoft plugin to integrate existing APIs with Splunk.

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 up to **82.8% accuracy** on automatic speech recognition for children, and up to 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, Python, BigQuery, Git