

## Skills

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**Programming** Python (numpy/pandas, PyTorch, matplotlib, scikit-learn), R (tidyverse, ggplot, Bioconductor), Markdown/HTML/CSS  
**Tools/Services** Linux (WSL2, conda/mamba, git), Jupyter, AWS (EC2, Lambda, S3)

## Relevant Projects

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### Technical Explainer of Basic RNA-Seq Analysis

[HTTPS://EXPOSED-PAIL.S3.US-WEST-1.AMAZONAWS.COM/RNA-SEQ-TRAINING.HTML](https://exposed-pail.s3.us-west-1.amazonaws.com/rna-seq-training.html)

- Tools used: R (tidyverse, DESeq2, recount, EnhancedVolcano, pheatmap), R Markdown, AWS S3.
- Concepts covered: accessing RNA-Seq data from GEO, differential gene expression analysis, data wrangling, data visualisation, statistical testing

### Top 10 Ranking in Australia on Rosalind (Bioinformatics Programming Platform)

[HTTP://ROSALIND.INFO/STATISTICS/COUNTRIES/AU/](http://rosalind.info/statistics/countries/au/)

- Tools used: Jupyter, Python (numpy, biopython, networkx, scipy).
- Concepts covered: algorithmic complexity (big O), dynamic programming, combinatorics, alignment and assembly.

### Feedforward Neural Network on the MNIST Dataset Without Deep Learning Libraries

[HTTPS://COLAB.RESEARCH.GOOGLE.COM/DRIVE/1FNrZCUNTft53NkYN5xaxDxsZGdd8V\\_\\_H](https://colab.research.google.com/drive/1FNrZCUNTft53NkYN5xaxDxsZGdd8V__H)

- Tools used: Google Colab, Python (numpy)
- Concepts covered: deep learning, multi-layer perceptron, backpropagation, stochastic gradient descent
- Trains at <1 sec per epoch on standard Colab CPU, and achieves approx. 93% accuracy on the MNIST test set.

### Polygenic Risk Score Analysis with PRSice-2

[HTTPS://NBVIEWER.JUPYTER.ORG/GITHUB/JMSDAO/PRS\\_PLOT/BLOB/MAIN/PRS.IPYNB](https://nbviewer.jupyter.org/github/jmsdao/PRS_PLOT/blob/main/PRS.ipynb)

- Tools used: Jupyter, Python (pandas, matplotlib), Linux command line (bash, PRSice\_linux), Markdown, LaTeX.
- Concepted covered: data wrangling, data visualisation, running Linux software with WSL.

## Employment

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### Tibra Capital

JUNIOR QUANT TRADER

Sydney, Australia

Feb 2019 - Feb 2020

- First junior trader of the cohort to be greenlit to trade solo.
- Managed market making operations of equity and index derivatives on the ASX and HKEX.
- Collaborated with quant researchers, software devs and key stakeholders to develop trading strategies, and improve efficiency of operations.

### University of New South Wales

LAB DEMONSTRATOR

Sydney, Australia

Jul 2016 - Jun 2018

- Taught 1st to 3rd year laboratory sessions for electrical engineering students.
- Engaged in project management for student capstone projects.

## Education

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### University of New South Wales

BACHELOR OF ENGINEERING (ELECTRICAL)

Sydney, Australia

Feb 2014 - Nov 2018