Mengmeng Wang

Data Scientist, Engineer, Researcher

📞 +61-466-989-626
✉ mengmeng.wang.phd@gmail.com
○ /mengmwang
in /mengmwang
🌐 /mengmwang.github.io

👤 Profile

I am a dedicated data scientist and researcher with a multidisciplinary background in electrical engineering, biomedical engineering and computer science. I have developed data cleaning and analysis, predictive modelling, machine learning and large language models. I am experienced in Python, R, MATLAB, SQL, Excel, Power BI, Tableau, and various Python and R libraries.

⚙ Skills

Programming Languages Python, R, SQL, MATLAB

Technical Tools GitHub, Tableau, Power BI, Excel

Python Libraries Pandas, NumPy, Scikit-Learn, transformers, NLTK, SciPy, Matplotlib, JSON, RegEx

Professional Data Analysis, Technical Writing, Project Management, Teamwork, Communications

🎓 Education

Doctor of Philosophy – Statistical Signal Processing   2017 – 2023
The University of Melbourne

Master of Science – Image Processing   2013 – 2014
University of Bristol

Bachelor of Engineering – Telecommunications Engineering   2009 – 2013
Beijing University of Posts and Telecommunications

💼 Experience

Data Scientist   Feb. 2023 – Present
Centre for Youth Mental Health, Orygen

> Experienced in data extraction, wrangling, and statistical analysis using structured and non-structured data.
> Applied machine learning algorithms and large language models in data analysis and health outcomes prediction.
> Contributed to developing statistical analysis plans and writing technical reports, research papers and policy briefings.
> Designed and implemented end-to-end machine learning pipelines, from data preparation to model deployment and performance monitoring.
> Collaborated with cross-functional teams including clinicians, researchers, and policy makers to deliver data-driven solutions for mental health service improvements.
> Developed interactive dashboards and visualisations for non-technical stakeholders to support data-informed decision-making.

Data Processing & Machine Learning Tutor (Casual)   Mar. 2019 – Nov. 2022
The University of Melbourne

> Delivered tutorials and practical workshops for three university-level courses: Data Processing, Machine Learning, and Signals & Systems.
> Taught key topics including data wrangling, format, visualisation, natural language processing, supervised and unsupervised learning, classification, regression, clustering, neural network.
> Demonstrated applied data science techniques using Python and Pandas, NumPy, Scikit-Learn libraries to teach modern data science and advanced machine learning concepts.

📁 Selected Projects (Available on GitHub)

EEG Data Analysis in Music Therapy

> Performed EEG Data Analysis and visualisations in music therapy research.
> EEG Data importing, cleaning, preprocessing, feature engineering, visualisations and statistical analysis.
> Collaborated with health professionals, doctors and music therapists, to investigate the impacts of music therapy on brain state and functional brain connectivity.
> Tools used: MATLAB and EEGLAB Toolbox.

Financial Timeseries Processing and Forecast

> Performed financial data analysis in Level 1 Limit Order Book data, across data processing pipeline.
> Data cleaning and preparation: outlier detection, data visualisation and feature engineering.
> Data analysis: correlation, moving-average, auto-regression analysis.
> Timeseries forecasting: auto-regression model and machine learning models (decision tree, logistic regression, neural networks).
> Tools used: Python, Jupyter Notebook, Pandas, NumPy, matplotlib, seaborn, statsmodels, sklearn, keras.

Customer Purchasing Behaviours Analysis 🔗

> Analysed customer transaction and purchase behaviour data to find patterns in customer behaviours.
> Perform data cleaning, preparation and visualisation to facilitate analysis.
> Draw insights on change in store layout in customer behaviours.
> Tools used: Python, Jupyter Notebook, Pandas, NumPy.

Reinforcement Learning and Multi-Armed Bandits (MABs) 🔗

> Implementation and evaluation of state-of-art reinforcement learning algorithms: ϵ-Greedy, Upper Confidence Bound (UCB), LinUCB and KernalUCB.
> Tools used: Python, Jupyter Notebook, NumPy.

📖 Selected Publications

> D. Baker, **M. Wang**, K. Filia, S.M. Teo, R. Morgan, M. Ziou, P. McGorry, V. Browne and C. Gao, "The changing impacts of social determinants on youth mental health in Australia." *The International journal of social psychiatry*, 71(1), 116–128, 2025.
> **M. Wang**, C. Davey and L. Johnston, "Correction of induced functional connectivity in filtered resting state fNIRS data," *The 27th Annual Meeting of the Organization for Human Brain Mapping (OHBM)*, 2021.
> **M. Wang**, L. Johnston and C. Davey, "Correction for time-varying signal power in fNIRS connectivity analyses," *Society of fNIRS Virtual Conference*, 2021.
> **M. Wang** and A. Seghouane, "Motion Artefact Removal in Functional Near-infrared Spectroscopy Signals Based on Robust Estimation," *IEEE International Conference on Acoustics, Speech and Signal Processing*, 2019.
> **M. Wang**, F. Zhang and D. Agrafiotis, "A very low complexity reduced reference video quality metric based on spatio-temporal information selection," *IEEE International Conference on Image Processing*, 2015.

🏷️ Volunteer Experience

Girl Power Mentor   Mar. 2021 – Dec. 2022
The University of Melbourne

> Mentored Year 11/12 female students with interests in science and engineering.
> Coached girls to develop strength and confidence to pursue tertiary education in science and engineering.

📄 References

Available Upon Request