

# Jiahe (Grace) Liu

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## EDUCATION

<b>The University of Melbourne</b> <i>Master of Data Science</i>	2023.03 - 2024.12
<b>The University of Melbourne</b> <i>Bachelor of Science in Data Science</i>	2020.08 - 2022.12
<b>Washington University in St. Louis (Post-master's Certificate)</b> <i>Artificial Intelligence Applications for Health Data</i>	2023.08 - 2023.12
<b>Stanford University (Summer Workshop)</b> <i>ICME Summer Workshops 2022: Fundamentals of Data Science</i>	2022.08 - 2022.08
<b>University College London (Exchange Study)</b> <i>Short Term Exchange: Business Psychology</i>	2022.07 - 2022.8

## RELEVANT COURSEWORK

**Courses:** Statistical Machine Learning, Machine Learning for Health, Cloud Clustering Computing  
**Awards:** Mobility Award

## EXPERIENCE

**Walter and Eliza Hall Institute of Medical Research(WEHI)** | *Data Science Research Intern* 2023.11 - 2024.02

- **Project Goal:** Aiming to build a machine learning computer program that selects the best microscope images for protein research.
- Aiming to learn using WEHI's powerful High Performance Computing (HPC) platform for analysing big data (5 TB).
- Aiming to set up and test these scripts and tools to benchmark speed, maintainability, and extensibility.
- Aiming to provide recommendations and suggestions for potential future projects.

**Monash Public Health and Preventive Medicine** | *Research Assistant* 2023.07 - Present

- **Project Overview:** Focused on the impact of air pollutants on human health, encompassing literature review, statistical analysis, and manuscript preparation.
- **Literature Review & Writing:** Reviewed literature on the sensory impact of PM2.5 on humans. Authored and co-authored manuscripts to share research insights with the scientific community.
- **Statistical Analysis:** Employed multilevel logistic regression to unravel the complex interplay between environmental factors and health outcomes. Expertise in statistical modelling using STATA and Python to derive meaningful public health insights.

**BOE Technology** | *Campus Ambassador at Overseas Recruitment Department* 2021.01 - 2023.12

- **Experience Overview:** Represented the brand overseas, spearheading initiatives at various institutions. Managed regional communities, coordinated 3 online and offline events at Australian Universities. Conducted market research on local employment trends and academic institutions.
- **Seasonal Recruitment:** Posted 100+ recruitment details on university platforms and built relationships with university career offices. Utilised LinkedIn Talent Solutions for Spring and Fall overseas recruitment, sourced 5000+ candidates.
- **Ambassador Recruitment for 2022 & 2023:** Produced 2 vlogs showcasing the BOE Campus Ambassador role, receiving 10,000 view exposure. Conducted 10+ interviews for upcoming Campus Ambassador positions.

**CITIC Securities** | *Business Department Intern* 2022.12 - 2023.02

- **Experience Overview:** Rotated across Fortune, Investment Advisory, Securities Finance, and Retail Departments. Acquired knowledge of the securities industry, company products, and analytical methods.
- **Key Contributions:** Fortune Department: Authored a report on China's securities industry. Investment Advisory: Analysed China's open-border policies and researched the photovoltaic industry. Retail Department: Conducted a fund analysis on fund 110023.

**Max Language** | *Essay Tutor*

2019.08 - 2021.01

- **Experience Overview:** Equipped students with essay writing skills, emphasising argument formation, logical reasoning, and critical thinking. Introduced students to foundational knowledge in western history and philosophy.
- **Tutoring Highlights:** Covered Western history & philosophy topics from Ancient Rome to the Contemporary Period. Engaged 20+ students in discussions on key philosophical and historical themes, such as human rights, free will, and social structures.

## PROJECTS

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**AIDetect** | *Pytorch, Tensorflow, Python, Git, Google Collab, VS Code*

2023.08 - 2023.09

- Developed a deep learning based NLP model to distinguish human and machine-generated text
- Experimented and compared several binary classifiers' performance: XGBoost, Logistic Regression, Random Forest, SVM, Recurrent Neural Network, Multi-layer Perceptron
- Achieved 85% test accuracy, ranking 3/92 on Kaggle competition

**HappinessMining** | *Melbourne Research Cloud, Docker, Mastodon API, Git, CouchDB, React, Ansible*

2022.04 - 2022.06

- Performed sentimental analysis across Australia and global population using data from Twitter and Mastodon
- Collected and distributed social media data across multiple instances on the Melbourne Research Cloud
- Conducted sentiment analysis using NLP, focusing on reasons, locations, and times associated with happiness
- Developed a full-stack web application that automatically refreshes our analysis based on the most recent social media posts

**SmartRent** | *Spark, Realestate API, Python, Flask, Git*

2022.08 - 2022.11

- Developed a full-stack web application for recommending the most liveable suburbs based on user's needs
- Experimented with Realestate API's Access Tokens and web scrapping to retrieve rent price-related data
- Analysed rental price determinants and predicted suburbs with the highest growth rates using machine learning

**Diabetes@Home** | *MongoDB, Postman, Node.js, JavaScript, Figma, Git, Heroku*

2022.03 - 2022.05

- Designed the web application's front-end to record clinician notes and medication reminders for diabetes patients, with a responsive layout adaptable to laptops, iPads, and phones
- Utilised modern design tools to create interactive prototypes, crafting intuitive and user-friendly interfaces
- Worked closely with back-end developers to ensure seamless integration and data flow

## SKILLS

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**Languages:** Python, Spark, SQL, C, C#, JavaScript, React, HTML/CSS,  $\text{\LaTeX}$

**Domains:** Data Engineering, Big Data Analysis, Machine Learning, Deep Learning, Web Development, Game Development, Cloud Computing

**Tools:** GitHub, R, STATA, MATLAB, MySQL, MongoDB, CouchDB, VSCode, Node.js, Unity

## PUBLICATIONS

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### Paper

- "Study on the mental health status and its influencing factors among middle school students in Yi nationality areas: a case study of Xide County, Liangshan Prefecture, Sichuan Province", 2023, *Sichuan Mental Health*, with W. Shi
- "The Longitudinal Association between PM2.5 and Sensory Impairment", with K. Ju (working in progress)

### Patent

- Utility Model Patent: A Multi-gear Flow-limiting Water-saving Faucet, 2017, *State Intellectual Property Office of the People's Republic of China*