Riley Ji

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PERSONAL STATEMENT

With a background in Applied Mathematics and strong skills in programming and data modeling, I am eager to apply my logical thinking and problem-solving abilities to real-world projects. I am continuously expanding my expertise in data science/analysis and machine learning algorithms while remaining open to learning new technologies.

TECHNICAL SKILLS

- **Languages:** Python, TypeScript, MATLAB
- **Web Technologies:** React, HTML, CSS, Bootstrap
- **Libraries & Frameworks:** Numpy, PyTorch, Power AI
- **Tools & Databases:** Git, SQL

EDUCATION

PhD in Applied Mathematics 2022 – Present
The University of Auckland
Focus: Heuristic methods for airway selection in bronchial thermoplasty.
Use MATLAB and Python to construct lung models and develop optimization algorithms.

Master of Science (Major: Applied Mathematics) 2020 – 2021
The University of Manchester
Grade Classification: Distinction
Work on several projects, including simulation of disease progression and construction of neural networks.

Bachelor of Science (Major: Applied Mathematics) 2016 – 2020
Dalian Maritime University
GPA: 86/100
Merit endorsement in Advanced Algebra, Operational research, Data Structure and Intelligence Computing

PROJECT EXPERIENCE

Personal webpage — Personal project (2025)

- Designed and built a personal website using React to showcase academic background, projects, and skills.

- Implemented reusable React components and applied modern styling practices for a clean, maintainable UI.
- Link: viasssss.github.io

Targeting strategy for bronchial thermoplasty — PhD Project (2025)

- Used mathematical modeling to construct lung structure based on CT-scan.
- Developed optimization and heuristic search algorithms(tabu search, genetic algorithms, k-nearest neighbor search, etc) to solve complex modeling problems in a biomedical context.
- Utilized Python and MATLAB for scientific computing, data visualization and statistical tests.

Neural networks — University project (2021)

- Implemented a stochastic gradient descent algorithm in C++ to train a neural network for supervised data classification.
- Analyzed key factors influencing model performance and accuracy.

Analysis of Feature Selection algorithms — University project (2020)

- Assessed and compared feature selection algorithms in Weka for high-dimensional classification tasks involving datasets with over 5,000 features, delivering recommendations for effective dimensionality reduction strategies.

VOLUNTEER EXPERIENCE

Laneway Music Festival (2025)

- Assisted at the main entrance by distributing wristbands and managing entry for over 300 attendees
- Answered questions and offered directions and event information
- Helped maintain a positive atmosphere through interacting and welcoming guests

UNIVERSITY INVOLVEMENT

2018 Puzzle Club, Member
2019 Piano Club, Member

INTERESTS

Enjoy baking, watching movies and playing board games.