Dr Mengyan Zhang

(+44) 7551041142
mengyan.zh@outlook.com
mengyanz.github.io

WORK & RESEARCH POSITIONS

Postdoctoral Researcher
Computational Statistics and Machine Learning, Department of Computer Science, University of Oxford. PI: Seth Flaxman. 2023.05 -
Affiliated with Kellogg College, Member of Machine Learning and Global Health Network.

Research Consultant
Project: Predict, Detect, Diagnose: Confronting Outbreaks of HIV and Other Infectious Diseases Among People Who Use Drugs; Yale University; 2024.10 -

NCCR Automation Fellowship
Funded Research Visit at Learning and Adaptive Systems (LAS) Group in ETH Zurich, Switzerland, Funded, up to CHF 20,000, 2024.02- 2024.04

Research Assistant
Vollmer Research Group,RPTU Kaiserslautern and German Research Center for Artificial Intelligence (DFKI), 2022.10 - 2023.4

Research Internship
Social Computing Lab, Microsoft Research Asia, 2021.10 - 2022.03, worked on deep contextual bandits for news recommendation.

Academic Teaching Assistant
Australian National University, paid teaching position, 2019-2021, total working hours: 300h

EDUCATION

Ph.D. in Machine Learning:
Adaptive Recommendations with Bandit Feedback (awarded in 2023.07)
Computational Media Lab, The Australian National University, 2018.08- 2023.02
Machine Learning Research Group, Data61, CSIRO, 2018.08- 2023.02

Bachelor of Computer Science (first class honours)
The Australian National University and Shandong University, 2+2 joint degree, 2014-2018, GPA 6.938/7.0

RESEARCH INTERESTS

My research focuses on designing decision-making algorithms in machine learning to improve robustness in theory and address real-world challenges across diverse fields such as synthetic biology, global health, survey design, and public policy. For example, in synthetic biology, I aim to optimize biological sequence design and experimental processes to improve efficiency and accelerate discovery. In global health, my work involves developing AI-driven models for resource allocation, enabling more effective disease surveillance and intervention strategies, particularly in resource-constrained settings. By integrating advanced AI and machine learning techniques, my research seeks to provide innovative solutions that have practical impacts across these various domains.

SELECTED AWARDS

2024 Award for Excellence, University of Oxford [top 10%]
2023 CORE Distinguished Dissertation Award Commendation (PhD thesis)
2022-2023 COVID-19 Extension Scholarship (Research)
2018-2022 PhD Scholarship of ANU, Data61 Top-up Postgraduate Research Scholarship
2018-2022 ANU HDR Fee Remission Merit Scholarship

INVITED TALKS & PRESENTATIONS

Feb. 2024: LAS Group, ETH Zurich, Switzerland
Talk: Sequential Decision-Making: Theory and Applications in Public Health
Dec. 2023: Google DeepMind, London
Talk: Design Choices in Sequential Decision-Making with Bandit Feedback
Nov. 2023: AIMS seminar, Oxford
Talk: Sequential decision making in public health
Nov. 2023: Bayes@CIRM Workshop, Marseille, France
Talk: Bayesian optimisation with aggregated feedback
Jul. 2023: University of Adelaide ADSC Seminar
Talk: Sequential Decision-making: Theory and Applications
Feb. 2022: Microsoft Research Asian Social Computing Group Seminar
Slides: Bandits in Recommendation System

TEACHING & SUPERVISION

Co-supervisor for master research project at Computer Science, University of Oxford: Improving Neural Machine Translation for Low-Resource Languages with Conformal Prediction and Uncertainty Quantification, 2024
College Advisor: in Kellogg College (MT23), providing mentorship to 7 postgraduate students.
Guest lecturer: at RMIT Bioinformatics and Multi-omics data analysis (BIOL 2524) : introduction to ML and applications in biology (remotely, 3 lectures, May 2023)
Tutor: for COMP8600 Statistical Machine Learning (S1 2019, S1 2020, S1 2021)
Tutor: for COMP6670 Introduction to Machine Learning (S2 2020)
Co-supervisor for undergraduate research project at Computer Science, ANU: Applying deep learning (BERT) to gene promoters, 2021

ORGANISATION & VISIT

Co-organiser for Machine Learning and Global Health Workshop, Oxford, June 2024
Research visit Andreas Krause at Learning & Adaptive Systems (LAS) Group in ETH Zurich, Switzerland, via NCCR Automation Fellowship (Funded, up to CHF 20,000), Feb - April 2024.
Research visit Silvia Chiappa at Causal Intelligence Team, Google DeepMind, London, Dec 2023.
Research visit Dino Sejdinovic in the School of Computer and Mathematical Sciences at The University of Adelaide, July 2023.

TECHNICAL SKILLS

Programming: Python (PyTorch), Java, C#, C++
Language: Chinese (native), English (working proficiency)
Others: Git, LaTeX

HIGHLIGHT PUBLICATIONS [1]

Optimal disease surveillance with graph-based Active Learning

Joseph L.-H. Tsui, **Mengyan Zhang***, Prathyush Sambaturu, Simon Busch-Moreno, Marc A. Suchard, Oliver G. Pybus, Seth Flaxman, Elizaveta Semenova, and Moritz U. G. Kraemer (2024). PNAS; KDD 2024 Workshop epiDAMIK*

Adaptive Recommendations with Bandit Feedback

***Mengyan Zhang** (2023). PhD thesis (Supervisors: Cheng Soon Ong, Lexing Xie, Eduardo Eyras)*

Gaussian Process Bandits with Aggregated Feedback

***Mengyan Zhang**, Russell Tsuchida, Cheng Soon Ong (2022). AAAI Conference on Artificial Intelligence.*

Machine learning Guided Batched Design of a Bacterial Ribosome Binding Site

***Mengyan Zhang**, Maciej Bartosz Holowko, Huw Hayman Zumpe, Cheng Soon Ong. (2022). ACS Synthetic Biology Journal.*

Quantile Bandits for Best Arms Identification

***Mengyan Zhang**, Cheng Soon Ong. (2021). International Conference on Machine Learning.*

Artificial intelligence for modelling infectious disease epidemics

*Moritz U. G. Kraemer, Joseph L.-H. Tsui, Serina Y. Chang, Spyros Lytras, Mark P. Khurana, Samantha Vanderslott, Sumali Bajaj, Neil Scheidwasser, Jacob Liam Curran-Sebastian, Elizaveta Semenova, **Mengyan Zhang** et al (2025). Nature.*

OTHER PUBLICATIONS/PRE-PRINT

Indirect Query Bayesian Optimization with Integrated Feedback

***Mengyan Zhang**, Shahine Bouabid, Cheng Soon Ong, Seth Flaxman, Dino Sejdinovic (2024). Under Review*

Transformer Neural Process - Kernel Regression

*Daniel Jenson, Jhonathan Navott, **Mengyan Zhang**, Makkunda Sharma, Elizaveta Semenova, Seth Flaxman (2024). Under Review.*

Uncertainty-Aware Regression via Multi-View Remote Sensing

*Fan Yang, Sahoko Ishida, **Mengyan Zhang**, Daniel Jenson, Swapnil Mishra, Jhonathan Navott, Seth Flaxman (2024). Under Review.*

Graph Agnostic Causal Bayesian Optimisation

Sumantrak Mukherjee, **Mengyan Zhang***, Seth Flaxman, Sebastian Josef Vollmer. (2024) Under Review; NeurPIS Bayesian Decision-making and Uncertainty Workshop, 2024*

Two-Stage Neural Contextual Bandits for Personalised News Recommendation

***Mengyan Zhang**, Thanh Nguyen-Tang, Fangzhao Wu, Zhenyu He, Xing Xie, Cheng Soon Ong (2023). Preprint.*

Opportunities and Challenges in Designing Genomic Sequences

***Mengyan Zhang**, Cheng Soon Ong (2021). ICML Workshop on Computational Biology.*

REFEREE

Prof. Seth Flaxman

Assoicate Professor in Department of Computer Science at University of Oxford
seth.flaxman@cs.ox.ac.uk

Dr. Cheng Soon Ong

Senior Principal Research Scientist, Director of ML and AI future science platform at CSIRO
chengsoon.ong@anu.edu.au

[1] *: EQUAL CONTRIBUTION