Ziqi Xu

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PROFESSIONAL SUMMARY

I am a Lecturer in Data Science and Artificial Intelligence at the School of Computing and Technologies, RMIT University. Before joining RMIT, I was a CERC Fellow at Data 61, Commonwealth Scientific and Industrial Research Organisation (CSIRO). I obtained my Ph.D. from STEM at the University of South Australia. Previously, I obtained my Master's degree from the School of Computer and Mathematical Sciences at The University of Adelaide. I have a broad interest in Responsible AI, particularly in causal inference, fairness, and explainable AI. My long-term goal is to build machine learning systems that are efficient, robust, fair, and interpretable.

EDUCATION

PhD in Computer Science, 02/2021 - 02/2024
University of South Australia - Adelaide, Australia

- Advisor: Prof. Jiuyong Li
- Thesis: Causal Inference with Deep Generative Models

MSc in Computing and Innovation, 02/2019 - 12/2020
University of Adelaide - Adelaide, Australia

BEng in Engineering, 08/2014 - 07/2018
Liaoning Petrochemical University - Fushun, China

WORKING EXPERIENCE

Lecturer in Data Science and Artificial Intelligence, 10/2024 - Current
School of Computing Technologies, RMIT University - Melbourne, Australia

CERC Fellow, 02/2024 – 10/2024
Data61, CSIRO - Melbourne, Australia

Casual Academic Staff, 01/2023 - 10/2024
University of South Australia - Adelaide, Australia

TEACHING EXPERIENCE

RMIT University - Melbourne, Australia

- Courses coordinator: **Programming Fundamentals for Scientists** (COSC2676/COSC2752), S1, 2025.

University of South Australia - Adelaide, Australia

- Lecturer and Practical Supervisor: **Relational Databases and Warehouses** (INFS 4019), SP5, 2023.
- Course Facilitator and Teaching Assistant: 2 × **Machine Learning** (INFT 3046), SP3, 2023 & SP3, 2024.
- Teaching Assistant: 2 × **Database for the Enterprise** (INFS 2011), SP2, 2023 & SP4, 2024.
- Teaching Assistant: 2 × **Predictive Analytics** (INFS 3081), SP6, 2023 & SP3, 2024.
- Teaching Assistant: 2 × **Data Acquisition and Wrangling** (INFT 2067), SP1 & 4, 2024.

- Teaching Assistant: **Advanced Topics in Data Analytics** (INFS 3087), SP1, 2024.
- Teaching Assistant: **Text and Social Media Analytics** (INFS 3089), SP3, 2023.
- Teaching Assistant: 3 × **Problem Solving and Programming** (COMP 1043), SP1, 4 & 6, 2023.

PUBLICATIONS

(* denotes equal contribution) (Selected)

[C01] **Ziqi Xu**, Debo Cheng, Jiuyong Li, Jixue Liu, Lin Liu, and Kui Yu. Causal Inference with Conditional Front-Door Adjustment and Identifiable Variational Autoencoder. In *Proceedings of the International Conference on Learning Representations* (ICLR 2024) [Core A*] [PDF]

[C02] Debo Cheng*, **Ziqi Xu***, Jiuyong Li, Jixue Liu, Lin Liu, and Thuc Duy Le. Conditional Instrumental Variable Regression with Representation Learning for Causal Inference. In *Proceedings of the International Conference on Learning Representations* (ICLR 2024) [Core A*] [PDF]

[C03] Debo Cheng*, **Ziqi Xu***, Jiuyong Li, Jixue Liu, Lin Liu, Wentao Gao and Thuc Duy Le. Instrumental Variable Estimation for Causal Inference in Longitudinal Data with Time-Dependent Latent Confounders. In *Proceedings of the AAAI Conference on Artificial Intelligence* (AAAI 2024) [Core A*] [PDF]

[C04] **Ziqi Xu**, Debo Cheng, Jiuyong Li, Jixue Liu, Lin Liu and Ke Wang. Disentangled Representation for Causal Mediation Analysis. In *Proceedings of the AAAI Conference on Artificial Intelligence* (AAAI 2023) [Core A*] [PDF]

[C05] Debo Cheng*, **Ziqi Xu***, Jiuyong Li, Lin Liu, Jixue Liu and Thuc Duy Le. Causal Inference with Conditional Instruments Using Deep Generative Models. In *Proceedings of the AAAI Conference on Artificial Intelligence* (AAAI 2023) [Core A*] [PDF]

PARTICIPATED RESEARCH PROJECTS

ARC Discovery Project (DP200101210): Fairness aware data mining for discrimination-free decision-making.

- This project aims to develop data mining methods to detect algorithmic discriminations and to build fair decisi on models. [Link]

ARC Discovery Project (DP230101122): Build competency aware and assuring machine learning systems.

- This project aims to develop novel techniques to equip a ML system with the ability to identify own competency, to justify its competency and decisions, to explore unknown situations and fully utilise existing expertise to deal with unknowns. [Link]

HONOURS AND AWARDS

- AAAI Student Scholarships, 2022, Association for the Advancement of Artificial Intelligence.
- University President's Scholarships (UPS), 2021, University of South Australia.
- Global Citizens Scholarship, 2020, University of Adelaide.
- Recipient of PEP Class Award, 2019, University of Adelaide.

ACADEMIC SERVICES

- Program committee member for ICLR, AAAI, NeurIPS, ECML-PKDD, UAI, IJCAI and KDD.
- Journal Reviewer: International Journal of Data Science and Analytics.
- Journal Reviewer: IEEE Transactions on Artificial Intelligence, International Journal of Data Science and Analytics and ACM Transactions on Knowledge Discovery from Data.