

## Dr. Weijia Zhang

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## Education

Ph.D., Thesis: Computational Causal Discovery from Observational Data.	2014-2018
University of South Australia. Supervisor: Prof. Jiuyong Li.	Australia
M.S., Thesis: Research on Multi-Instance Learning Methods with Sample Distribution Change.	2011-2014
Supervisor: Prof. Zhi-Hua Zhou. Nanjing University.	China
B.S., Information and Computing Sciences.	2007-2011
Nanjing University	China

## Publication

**Zhang, W., Li, J. and Liu, L.** Distributionally robust multi-Instance learning with stable instances. In *Proceedings of the 24<sup>th</sup> European Conference of Artificial Intelligence (2020, CORE Ranking: A)*

Tomasoni, M., Gómez, S., Crawford, J., **Zhang, W.**, Choobdar, S., Marbach, D. and Bergmann, S. MONET: a toolbox integrating top-performing methods for network modularisation. *Bioinformatics*. In Press. **(2020, Impact Factor: 5.48)**

Choobdar, S., et al., **Zhang, W. in Dream Consortium.** Assessment of network module identification across complex diseases. *Nature Methods*. 16, 843–852 (2019). **(2019, Impact Factor: 28.47)**

Brown, P., et al, **Zhang, W. in Relish Consortium.** Large expert-curated database for benchmarking document similarity detection in biomedical literature search. *Database* (2019). **(2019, Impact Factor: 3.98)**

**Zhang, W., Le, T., Liu, L., and Li, J.** Estimating heterogeneous treatment effects by balancing heterogeneity and fitness. *BMC Bioinformatics*, 19(19): 514. **(2018, Impact Factor: 2.51)**

Xu, T., Su, N., Liu, L., Zhang, J., Wang, H., **Zhang, W.**, Gui, J., Yu, K., Li, J. and Le, T. miRBaseConverter: An R/Bioconductor package for converting and retrieving miRNA information in different versions of miRbase. *BMC Bioinformatics*, 19(19): 518. **(2018, Impact Factor: 2.51)**

**Zhang, W., Le, T., Liu, L., Zhou, Z.-H., and Li, J.** (2017) Mining heterogeneous causal effects for personalized cancer treatment. *Bioinformatics*, 33(15), pages 2372-2378. **(2017, Impact Factor: 5.48)**

**Zhang, W., Le, T., Liu, L., Zhou, Z.-H. and Li, J.** (2016) Predicting miRNA targets by integrating gene regulatory knowledge with expression profiles. *PLOS One*, 11(4): e0152860. **(2016, Impact Factor: 2.80)**

**Zhang, W.** and Zhou, Z.-H. Multi-Instance Learning with Distribution Change. (2014) In *Proceedings of the 28th AAAI Conference on Artificial Intelligence (AAAI-2014)*, pages 2184–2190. **(2014, CORE Ranking: A\*)**

**Zhang, W., Liu, L and Li, J.** Treatment effect estimation with disentangled latent factors. *Under Review*.

**Zhang, W., Liu, L and Li, J.** A unifying review on conditional treatment effect estimation and uplift modelling. *Under Review*.

Li, J., **Zhang, W.**, Liu, L., Yu, K., Le, T. and Liu, J. A general framework for causal classification. *Under Review*.

## Teaching

Course Coordinator & Lecturer, Predictive Analytics, UniSA, 2020.

Course Coordinator & Lecturer, Unsupervised Methods in Analytics, UniSA, 2019.

Lecturer & Tutor, Data and Web Mining, UniSA, 2018, 2020.

Teaching Assistant, Data Structures and Algorithms, Nanjing University, 2014.

## Student Supervision

Wang, S., Visiting PhD, UniSA, Zero-shot domain adaption with causal domain knowledge.

Zou, M., Visiting PhD, UniSA, Individual treatment effect estimation from observational data.

## Industry Collaboration

**Santos, Ltd.** 2018.5-2019.5. (Research income: 50,000 AUD). We designed, implemented and deployed an autonomous fault detection system for the progressive cavity pumps in CSG wells. Evaluations by production engineers demonstrate that the system significantly reduced the need for human intervention in well operations and reduced the maintenance costs.

**Telstra, Co. Ltd.** 2017.9-2018.2. (Research income: 15,000 AUD). I designed and implemented customer churn prevention system for post-paid mobile customers. Analyzed unlabeled large data from Telstra 24x7 online chat platform, improved customer satisfaction and reduced operating costs for the platform. Provided evidence-based suggestions to management.

## Awards and prizes

2<sup>nd</sup> Place, 3 Minute Thesis Competition (3MT®), School of Information Technology and Mathematical Science, University of Australia, 2016.

2<sup>nd</sup> Place, Team Leader, DREAM Data Mining Challenge on Disease Module Identification, 2016.

University President's Scholarship, University of South Australia, 2014.

ITMS Scholarship, University of South Australia, 2014.

Best Master Thesis Award, Department of Computer Science and Technology, Nanjing University, 2014.

## Academic Service

I have served as program committee members and reviewers for academic journal and conferences, including:

- Program Committee Member: IJCAI-2020, ECAI-2020, AusDM-2019/2018, KDD 2019/2018, etc.
- Conference Reviewer: AAAI 2019/2018/2017, KDD-2019/2018/2017/2016, CKIM-2019/2018/2017/2016, WSDM-2019, etc.
- Journal Reviewer: Bioinformatics, PLOS One, BMC Bioinformatics, Journal of Computer Science and Information Technology, Journal on Wireless Communications and Networking, etc.

## Invited Talk

Robust multi-instance learning with stable instances, ECAI Conference, Santiago de Compostela, Spain.

Robust learning changing environments, Harbin Institute of Technology. Harbin, China.

Estimating treatment effect by balancing heterogeneity and fitness, GIW Conference, Kunming, China.

Multi-instance learning with distribution change, AAAI Conference, Québec, Canada.

## Referee

1. Prof. Jiuyong Li, Email: jiuyong.li@unisa.edu.au
2. A. Prof. Lin Liu, Email: lin.liu@unisa.edu.au
3. Dr. Jixue Liu, Email: jixue.liu@unisa.edu.au