Chenyuan Zhang

zcy9217@gmail.com LinkedIn Personal Website
https://github.com/chen-yuan-zhang

Research Experience

June 2025 – **Research Fellow (level B), Monash University** in UAV Algorithm Design.

- Working on the research project **HARNESS: Hierarchical Abstractions and Reasoning for Neuro-Symbolic Systems**. Designed and implemented the **hierarchical symbolic algorithm** for UAVs to effectively **navigate and search** in unknown environments.
- Developed and deployed Active Goal Recognition models in settings ranging from classical planning benchmarks to real-world autonomous drone platforms.

June 2024 – **Honorary Research Fellow, University of Melbourne** in Artificial Intelligence.

- Supervised Master's student research projects focusing on multi-agent reinforcement learning and imitation learning.

June 2024 – June 2025 **Research Fellow (level B), Monash University** in Human-Robot Interaction.

- Working on the ARC discovery project **Human models for accelerated robot learning and human-robot interaction**. Designed and implemented a framework capable of generating and predicting diverse behaviors in a weakly supervised manner.

Feb 2020 – May 2024 **Ph.D., University of Melbourne** in Artificial Intelligence.

- Focused on building human-like AI algorithms in the context of **problem solving** and **intention recognition**, The significance of my work on the fields of AI and cognitive science was acknowledged through the acceptance and presentation of my research at top-tier (A*/A) AI and cognitive science conferences, including **ICAPS, AAMAS, and CogSci**.

Mar 2013 – July 2015 **Research Assistant, The Institute of Psychology, Chinese Academy of Sciences** in neuroscience.

- My primary task was to create a platform that allowed participants to **visualize their fMRI signals in real-time** using MATLAB. This involved implementing **complex signal processing algorithms** to ensure the accuracy and reliability of real-time feedback and optimizing the overall performance of the system. Our team published multiple publications in top journals (e.g. **Neuropsychology and Psych**) based on this platform.

Education

2020 – 2024 **Ph.D., University of Melbourne** in Artificial Intelligence.
Thesis title: *Planning and Goal Recognition in Humans and Machines*

Education (continued)

2018 – 2019 **Master of Information Technology, University of Melbourne** in Computing.
High Distinction (WAM:88/100)

2010 – 2014 **Bachelor of Science, Peking University** in Psychology.
Minor in Statistics (GPA: 3.23/4)

Selected Research Publications

Journal Articles

1. Z. Cai, C. R. Cardenas, K. Leo, **C. Zhang**, K. Backman, H. Li, B. Li, M. Ghorbanali, S. Datta, L. Qu, *et al.*, "Neusis: A compositional neuro-symbolic framework for autonomous perception, reasoning, and planning in complex uav search missions," *IEEE Robotics and Automation Letters*, 2025.
2. Z. Li, **C.-y. Zhang**, J. Huang, Y. Wang, C. Yan, K. Li, Y.-w. Zeng, Z. Jin, E. F. Cheung, L. Su, *et al.*, "Improving motivation through real-time fmri-based self-regulation of the nucleus accumbens.," *Neuropsychology*, vol. 32, no. 6, p. 764, 2018.
3. Y. Wang, Y. Deng, Z. Li, X. Li, **C.-y. Zhang**, Z. Jin, M.-x. Fan, M. T. Compton, E. F. Cheung, K. O. Lim, *et al.*, "A trend toward smaller optical angles and medial-ocular distance in schizophrenia spectrum, but not in bipolar and major depressive disorders," *PsyCh Journal*, vol. 5, no. 4, pp. 228–237, 2016.
4. R.-t. Zhang, T.-x. Yang, Y. Wang, Y. Sui, J. Yao, **C.-y. Zhang**, E. F. Cheung, and R. C. Chan, "Structural neural correlates of multitasking: A voxel-based morphometry study," *PsyCh journal*, vol. 5, no. 4, pp. 219–227, 2016.

Conference Proceedings

1. Q. Shen, G. Hu, and **C. Zhang**, "Proactive assistance agent with online goal recognition," in *Proceedings of the international conference on automated planning and scheduling (Accepted)*, 2026.
2. **C. Zhang**, S. Huang, H. Rezatofighi, M. Vered, and B. Say, "Neurosymbolic active goal recognition in partially observable environments," in *Proceedings of the 25rd International Conference on Autonomous Agents and Multiagent Systems (Accepted)*, 2026.
3. W. Li, **C. Zhang**, W. Li, G. Hu, and Y. Xu, "Modeling higher-order human beliefs using the justified perspective model," in *Proceedings of the Extended Abstracts of the CHI Conference on Human Factors in Computing Systems*, 2025, pp. 1–8.
4. **C. Zhang**, C. R. Cardenas, H. Rezatofighi, M. Vered, and B. Say, "Probabilistic active goal recognition," in *International Conference on Principles of Knowledge Representation and Reasoning 2025*, Association for the Advancement of Artificial Intelligence (AAAI), 2025, pp. 880–890.
5. **C. Zhang**, Y. Liu, D. Kulic, P. Carreno-Medrano, and M. Burke, "Modeling human sequential decision-making in the tower of london: Incorporating individual differences and timing-based replanning inference," in *Proceedings of the Annual Meeting of the Cognitive Science Society*, vol. 47, 2025.
6. **C. Zhang**, C. Kemp, and N. Lipovetzky, "Human goal recognition as bayesian inference: Investigating the impact of actions, timing, and goal solvability," in *Proceedings of the 23rd International Conference on Autonomous Agents and Multiagent Systems*, 2024, pp. 2066–2074.
7. **C. Zhang**, C. Kemp, and N. Lipovetzky, "Goal recognition with timing information," in *Proceedings of the international conference on automated planning and scheduling*, vol. 33, 2023, pp. 443–451.
8. **C. Zhang**, N. Lipovetzky, and C. Kemp, "Comparing ai planning algorithms with humans on the tower of london task," in *Proceedings of the Annual Meeting of the Cognitive Science Society*, vol. 45, 2023.

Miscellaneous Experience

Community Services

- 2024 — Organizer, Agents-Vic Autumn Symposium 2024
- 2025 — Publicity Chair, ICAPS 2025 (A* conference in AI Planning)
- 2022 - current — Program Chair/Reviewer for top conferences and journals, including ICAPS, CogSci, IJCAI, ICRA, KR, and Robotics and Autonomous Systems (RAS).

Selected Awards and Achievements

- 2024 — **Pragnesh Jay Modi Best Paper Award**, International Conference on Autonomous Agents and Multiagent Systems
- 2023 — **Melbourne School of Engineering Travelling Scholarship**, University of Melbourne
- **Engineering and IT Conference Travel Scholarship**, University of Melbourne
- 2020 - 2023 — **Melbourne Research Scholarship**, University of Melbourne
- 2019 — **Grant of SummerTech LIVE**, The Victorian Government
- 2018, 2019 — **Dean's Honours List**, University of Melbourne
- 2012 — **Excellence Awards for Social Activity**, Peking University

Selected Teaching Experience

- 2026- — **FIT5047 Foundation of AI**. Monash University
- 2020-2022, 2024 — **COMP90054 AI Planning for Autonomy**. University of Melbourne
- 2020-2022 — **COMP90038 Algorithms and Complexity**. University of Melbourne
- 2020-2021, 2024 — **COMP30027 Machine Learning**. University of Melbourne
- 2021 — **COMP30024 Artificial Intelligence**. University of Melbourne
- **COMP30026 Models of Computation**. University of Melbourne