

# MENGJING WU

Australian Artificial Intelligence Institute | School of Computer Science | Faculty of Engineering and IT  
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## RESEARCH INTEREST

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*Probabilistic machine learning, Bayesian deep learning, Functional Bayesian inference*

I mainly focus on the functional inference for Bayesian neural networks (BNNs), including functional variational inference, functional MCMC, functional Laplace approximation, and functional diffusion. I am also interested in the geometric properties of the posterior landscape in BNNs.

## EDUCATION

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- **University of Technology Sydney** *Jul 2021 - Feb 2026*  
*Ph.D. in Computer Science*
  - Supervisors: [Dr. Junyu Xuan](#) and [Dist.Prof. Jie Lu](#)
  - Thesis: Functional Inference for Bayesian Neural Networks
- **Central South University** *Sep 2017 - Jun 2020*  
*M.S. in Management Science and Engineering*
  - GPA: 3.8/4
- **Central South University** *Sep 2012 - Jun 2016*  
*B.S. in Statistics*
  - GPA: 3.9/4

## EXPERIENCE

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- **Postdoctoral Research Associate** *Aug 2025 - Mar 2026*  
*DeepBayes Lab, Australia Artificial Intelligence Institute* | *University of Technology Sydney* *Sydney, Australia*
  - Designed and developed an **LLM-powered system for automated data transformation**, converting heterogeneous enterprise data into structured consumption tables
  - Collaborated with industry stakeholders and developed scalable solutions for **enterprise data integration and schema alignment**
- **Research Assistant** *Jan 2025 - Jul 2025*  
*DeepBayes Lab, Australia Artificial Intelligence Institute* | *University of Technology Sydney* *Sydney, Australia*
  - Conducted research in Bayesian deep learning and probabilistic modelling
- **Visiting Researcher** *Jul 2019 - Oct 2019*  
*Loughborough University London* *London, UK*
  - Worked on data-driven modelling and optimisation problems

## PUBLICATIONS

C=CONFERENCE, J=JOURNAL, T=THESIS

- [T.1] **Mengjing Wu. Functional Inference for Bayesian Neural Networks.** *University of Technology Sydney*, 2026.
- [C.1] Junyu Xuan, **Mengjing Wu. Wavelet Conditional Neural Processes.** *Symposium on Probabilistic Machine Learning (ProbML)*, 2026.
- [C.2] **Mengjing Wu, Junyu Xuan, Jie Lu. Bridging the Gap between Variational Inference and Stochastic Gradient MCMC in Function Space.** *The 13th International Conference on Learning Representations (ICLR)*, 2025.
- [C.3] **Mengjing Wu, Junyu Xuan, Jie Lu. Functional Stochastic Gradient MCMC for Bayesian Neural Networks.** *The 28th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2025.
- [C.4] **Mengjing Wu, Junyu Xuan, Jie Lu. Functional Wasserstein Bridge Inference for Bayesian Deep Learning.** *The 40th Conference on Uncertainty in Artificial Intelligence (UAI)*, 2024. (**Oral presentation**)
- [C.5] Junyu Xuan, **Mengjing Wu, Zihe Liu, Jie Lu. Functional Wasserstein Variational Policy Optimization.** *The 40th Conference on Uncertainty in Artificial Intelligence (UAI)*, 2024.
- [C.6] **Mengjing Wu, Junyu Xuan, Jie Lu. Indirect Functional Bayesian Neural Networks.** *The 5th Symposium on Advances in Approximate Bayesian Inference (AABI)*, 2023.
- [J.1] Xiaohong Chen, **Mengjing Wu, Chunqiao Tan, Tao Zhang. A random intuitionistic fuzzy factor analysis model for complex multi-attribute large group decision-making in dynamic environments.** *Fuzzy Optimization and Decision Making*, Vol. 20, Springer US, 2021.

## PREPRINTS

- **Mengjing Wu, Junyu Xuan, Yingzhen Li. Teleportative Stochastic Gradient MCMC for Bayesian Neural Networks.**
- Junyu Xuan, **Mengjing Wu, Jie Lu. Implicit Functional Bayesian Deep Learning.**

## PROJECTS

- **Automating Consumption Tables Generation using Large Language Models**
  - Developed an LLM-based system to automate schema alignment and SQL generation from raw enterprise datasets
  - Reduced manual effort in data modelling and ETL pipeline creation
  - Designed modular architecture for scalable deployment
- **Enabling Reliable and Scalable AI with Geometry-aware Bayesian Deep Learning**
  - Developed novel MCMC techniques for Bayesian neural networks to improve sampling efficiency
  - Introduced symmetry-aware sampling (teleportation across energy landscapes) to enhance mixing rates
  - Improved model generalization and scalability in high-dimensional and multi-modal deep neural networks

## SKILLS

- **Programming & Tools**  
Python (PyTorch, Pandas, NumPy), SQL, FAISS, Sentence Transformers
- **Machine Learning & AI**  
Bayesian Deep Learning, Machine Learning, Statistical Modelling  
Generative AI (LLMs, Prompt Engineering, RAG)
- **Data Science & Engineering**  
Data preprocessing, Feature engineering, Data modelling  
Schema mapping, Data pipeline design, SQL generation

## HONORS AND AWARDS

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- **Awards**

*Central South University*

- Scholarship for International Exchange Programs, 2019
- First-class Graduate Student Research Fellowship, 2017, 2018
- Outstanding Graduate Student, 2016
- Xinheng Education Scholarship (*top 5% at the School of Mathematics and Statistics*), 2015
- First-class Scholarship (*top 10% at the School of Mathematics and Statistics*), 2013, 2014 and 2015

- **Competition Achievement**

*Mathematical Contest in Modelling*

- Honorable Mention in the American Undergraduate Mathematical Contest in Modelling, 2015
- Second Prize in the Chinese Undergraduate Mathematical Contest in Modelling, 2014

## ACADEMIC SERVICE

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**Reviewer**

UAI (2025-2026), ICML (2025-2026), NeurIPS (2026), ICLR (2026), IJCNN (2024-2025), TMLR (2025), SMC: Systems (2025)