Zhipeng "Zippo" He | 何志鹏

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Education

Queensland University of Technology (QUT) — **Brisbane, Australia**
Doctor of Philosophy, Ph.D. — *2022–Now*
Bachelor of Information Technology (Honours), First Class — *2021*
*Bachelor of Information Technology (Information Systems)** — *2020*

Jinling Institute of Technology (JIT) — **Nanjing, China**
*Bachelor of Engineering (Software Engineering)** — *2016–2020*
*JIT–QUT Joint Bachelor of IT Program

Experience

Research

Research Associate — **Brisbane**
Energy Transition Centre & School of Information Systems, QUT — *August 2025–Now*
- Reviewed and synthesised literature on BESS with a focus on operational optimisation across different scales.
- Analysed how optimisation approaches and objectives differ across system scales.
- Developed a structured framework to summarise and compare existing optimisation methods.

Senior Research Assistant — **Brisbane**
School of Information Systems, QUT & eLu Australia — *Apr–Sept 2025*
- Established baseline understanding of electricity outages and price dynamics in Australian National Electricity Market (NEM) through the review of Australian Energy Market Operator (AEMO) reports, industry literature, and exploratory data analysis.
- Identified and analysed root causes of electricity outages and price volatility within NEM.
- Developed and evaluated a predictive model for electricity price forecasting, improving on current AEMO capabilities.
- Designed and implemented an interactive dashboard for visualising historical NEM data and real-time electricity price forecasts.

Research Assistant — **Brisbane**
School of Information Systems, QUT — *Nov–Dec 2023*
- Collected literature about multi-modal fusion on time-sequence data and found related research gaps.
- Developed multi-modal fusion methods for time-sequence data to enhance the capability of predictive systems.
- Developed an open-source tool package to implement the fusion methods, enabling testing and validation.
- Designed and executed experiments for evaluation, utilising publicly accessible real-world datasets.

Research Assistant — **Brisbane**
School of Information Systems, QUT — *Oct–Dec 2021*
- Developed an analytical method for applying explainable AI (XAI) techniques to inspection of predictive models.
- Implemented the XAI method as an open-source tool package for testing and validation using publicly available real-life datasets.
- Built visualisation of model inspection results and developed a website for project publicity.

Vacation Research Experience Scheme (VRES) Participant — **Brisbane**
School of Information Systems, QUT — *Nov 2020–Feb 2021*
- Aimed to address how to visualise organisational analytics results as informed by existing visual analytics design principles.
- Proposed an organisational mining visualisation design workflow for selecting appropriate visualisation techniques to generate organisational mining visualisation.

Learning and Teaching

Academic Tutor — **Brisbane**
QUT — *Feb–Nov 2025*
- Proposed the topic *Australian NEM* for the graduate research project unit *Minor Project (IFN695)*.
- Assisted with weekly student supervision, participated in presentation assessment panels, and graded final project reports.

Teaching Assistant — **Brisbane**
QUT — *Feb–Jun 2024*

- Proposed the topic *Anomaly Detection in ECG Signals* for the graduate research project unit *Advanced Project (IFN703/4)*.
- Assisted with weekly student supervision, participated in presentation assessment panels, and graded final project reports.

Industry

Capstone Analyst (Industry Capstone Project) **Brisbane**
Suncorp Group *Mar–Oct 2020*

- Delivered an industry-partnered capstone project to support the integration of Management Information Systems for Insurance Portfolio Management Office in Suncorp.
- Conducted business analysis and configured enterprise architecture tools (ARIS and Alfabet), integrating systems using existing APIs and data frameworks, and customising object and model mappings to meet organisational requirements.
- Developed integration risk management and deployment documentation to support production implementation.

Academic Service

Reviewer for:

- Biomedical Engineering: Applications, Basis and Communications
- IEEE Journal of Biomedical and Health Informatics
- IEEE Open Journal of the Industrial Electronics Society
- International Conference on Process Mining, 2024–2025
- International Journal of Machine Learning and Cybernetics
- Journal of King Saud University – Computer and Information Sciences
- Knowledge-Based Systems
- Neural Processing Letters
- Patterns
- Scientific Reports
- Telecommunication Systems
- World Conference on eXplainable Artificial Intelligence, 2024

Publications

Journal Articles

[1] **Zhipeng He**, Chun Ouyang, Lijie Wen, Cong Liu, and Catarina Moreira. TabAttackBench: A benchmark for adversarial attacks on tabular data. *Expert Systems with Applications*, 301:130491, 2026. doi:10.1016/j.eswa.2025.130491.

[2] **Zhipeng He**, Alexander Stevens, Chun Ouyang, Johannes De Smedt, Alistair Barros, and Catarina Moreira. Crafting imperceptible on-manifold adversarial attacks for tabular data. *Applied Soft Computing*, 186, Part D:114286, 2026. doi:10.1016/j.asoc.2025.114286.

[3] **Zhipeng He**, Chun Ouyang, Laith Alzubaidi, Alistair Barros, and Catarina Moreira. Investigating imperceptibility of adversarial attacks on tabular data: An empirical analysis. *Intelligent Systems with Applications*, 25:200461, 2025. doi:10.1016/j.iswa.2024.200461.

[4] Bemali Wickramanayake, **Zhipeng He**, Chun Ouyang, Catarina Moreira, Yue Xu, and Renuka Sindhgatta. Building interpretable models for business process prediction using shared and specialised attention mechanisms. *Knowledge-Based Systems*, 248:108773, 2022. doi:10.1016/j.knosys.2022.108773.

Theses

[5] **Zhipeng He**. *Building adversarially robust predictive systems for tabular data*. PhD thesis, Queensland University of Technology, Brisbane, Australia, 2026. Under examination.

[6] **Zhipeng He**. Investigating the impact of event logs on deep learning-based process prediction performance. Honours thesis, Queensland University of Technology, Brisbane, Australia, 2021. URL https://zhipenghe.me/assets/pdf/Honours_Thesis.pdf.

Preprints

[7] Jia Wei, Chun Ouyang, Bemali Wickramanayake, **Zhipeng He**, Keshara Perera, and Catarina Moreira. Curation and analysis of MIMICEL – an event log for MIMIC-IV emergency department. arXiv:2505.19389 [cs.DB], 2025.

Datasets

[8] Jia Wei, **Zhipeng He**, Chun Ouyang, and Catarina Moreira. MIMICEL: MIMIC-IV event log for emergency department. PhysioNet, 2023. doi:10.13026/c9yj-1t90. Version 2.1.0.

Awards and Prizes

High Achiever HDR Student
Faculty of Science, QUT *Dec 2025*
Awarded for demonstrating sustained high achievement in research and esteem measures.

Best HDR Championship
School of Information Systems, QUT *Dec 2025*
Awarded for outstanding leadership, advocacy and impactful research within the HDR community.

HDR Accomplishment Award
School of Information Systems, QUT *Dec 2025*
Awarded for high-quality research with strong publications as a current HDR candidate.

Doctoral Consortium Outstanding Presentation Award
School of Information Systems, QUT *Nov 2024*
Awarded for outstanding presentation at the 2024 QUT School of Information Systems Doctoral Consortium.

QUT Postgraduate Research Award (QUTPRA)
QUT *2022–2025*
Competitive research scholarship awarded for funding full-time PhD research at QUT.

QUT HDR Tuition Fee Sponsorship
QUT *2022–2026*
Tuition fee sponsorship awarded to support full-time PhD research at QUT.

Dean's List Award
Faculty of Science, QUT *2021*
Awarded in recognition of excellent academic performance for Honours at QUT.

Australian Mathematical Sciences Institute (AMSI) Winter School Scholarship
AMSI *2021*
Awarded for funding my participation in the Winter School in July 2021.

QUT International Merit Scholarship
QUT *2020–2021*
Awarded for funding undergraduate and Honours study at QUT.

QUT Vacation Research Experience Scheme (VRES) Scholarship
QUT *2020*
Awarded for funding a three-month VRES research project in late 2020.

First-class Scholarship for Undergraduate Student
JIT *2018–2019*
Awarded for funding undergraduate study at JIT.

Merit Student Award
JIT *2017–2018*
Awarded in recognition of outstanding academic performance at JIT.