

ZIHAN ZHANG

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🎓 EDUCATION

University of Technology Sydney, Sydney, Australia Mar 2021 – expected Dec 2024

Industry-based (TPG Telecom) *Ph.D. student* in Computer Science, 🌐 UTS NLP Group

- Research: knowledge updating in Large Language Models
- Supervisor: 🌐 Prof. Ling Chen

University of Melbourne, Melbourne, Australia Jul 2018 – Dec 2020

Master in Software Engineering

- GPA: 83/100 (Top-5%, First Class Honours/Distinction)
- Awards: 🌐 Dean's Honours List (2019 & 2020), Liz Haywood Award (2020)

University of British Columbia, Vancouver, Canada Jul 2017 – Aug 2017

Summer Exchange Program in Electrical and Computer Engineering (ECE)

China Pharmaceutical University, Nanjing, China Sep 2014 – Jun 2018

Bachelor in Information System and Information Management

👥 WORKING EXPERIENCE

TPG Telecom Sydney, Australia Mar 2021 – Dec 2023

Research Analyst Fulltime

- **NPS survey topic modelling** - propose unsupervised clustering-based topic modelling to find latent topics among customer NPS feedback using textual embeddings from BERT, SBERT and SimCSE
Outcomes: research paper [5]; improved topic coherence by **12%** on public datasets and **3.7%** on proprietary data; reduced manual work in extracting keywords insights by about **80%**
- **Webchat & Call Centre dialogue analysis** - study on the transformation of millions of raw dialogue data between customers and call centre agents into AI-driven telco service chatbots
Outcomes: research paper [5]; finetuned GPT-2 and T5 models as Proof of Concept (POC) chatbots; reduced human annotation of new dialogue state data by **86%** on public datasets and **61%** on proprietary data while achieving comparable dialogue state tracking performance
- **Market offer engine** - automatically collect, transform, and analyse market offers on the Internet for promptly making in-house product pricing strategies
Outcomes: built web scrapers with BeautifulSoup and Selenium; deployed end-to-end pipelines using AWS Step Functions; unify **unstructured** data (HTML text, posters, PDFs) into **structured** tables using Camelot and RegEx; stored in S3 for serving downstream analysis

RESORTer Melbourne, Australia Nov 2019 – Mar 2020

Front-end Software Developer Intern

- Refactor and develop the Lesson module in the resort web application using React.js and Material-UI
- Key outcomes: simplified web UI and work-flow logic; improved rendering performance

📖 PUBLICATIONS

- [1] 🌐 RetrievalQA: Assessing Adaptive Retrieval-Augmented Generation for Short-form Open-Domain Question Answering. **Zihan Zhang**, Meng Fang, and Ling Chen. *preprint under review*, 2024 📄
- [2] 🌐 How Do Large Language Models Capture the Ever-changing World Knowledge? A Review of Recent Advances. **Zihan Zhang***, Meng Fang*, Ling Chen, Mohammad-Reza Namazi-Rad, and Jun Wang. *Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2023 📄

- [3] 🦉 CITB: A Benchmark for Continual Instruction Tuning. **Zihan Zhang**, Meng Fang, Ling Chen, and Mohammad-Reza Namazi-Rad. *Findings of the Association for Computational Linguistics (EMNLP, Findings)*, 2023 🦉
- [4] 🦉 Turn-Level Active Learning for Dialogue State Tracking. **Zihan Zhang**, Meng Fang, Fanghua Ye, Ling Chen, and Mohammad-Reza Namazi-Rad. *Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2023 🦉
- [5] 🦉 Is Neural Topic Modelling Better than Clustering? An Empirical Study on Clustering with Contextual Embeddings for Topics. **Zihan Zhang**, Meng Fang, Ling Chen, and Mohammad Reza Namazi Rad. *Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*, 2022 🦉

★ ACADEMIC SERVICES

Top-tier conference peer reviewer:

- EMNLP 2022-2023
- EACL 2023
- ACL Rolling Review 2023-2024

⚙️ SKILLS & CERTIFICATES

Languages: Chinese (native), English (fluent)

Programming: Python (proficient) > SQL == JavaScript > Spark == Java

Libraries & Services: PyTorch, HuggingFace, AWS (S3, SageMaker, Redshift), Databricks

Software & Tools & Management: Git, Linux, Agile, Scrum, Confluence, Jira, \LaTeX

Certificates:

- 🦉 AWS Cloud Practitioner
- 🦉 (Databricks) Large Language Models: Application through Production
- 🦉 Deep Learning Specialization (Coursera by Andrew Ng)

📖 REFERENCE

Reference available on request.