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)

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 [4]; 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: deployed end-to-end web scraper pipelines using AWS Step Functions; unify **unstructured** data (HTML text, posters, PDFs) into **structured** tables and stored in Redshift 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)

ℹ Reference

Reference available on request.