

Shiwei Zhang

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Profile

A highly skilled and experienced PhD in Computer Science with seven years of experience researching and developing NLP models. Seeking opportunities to design and implement innovative generative AI algorithms that can improve the quality of life for people around the world.

Research interests: AI safety-oriented research, multi-task generative model, and steerable text generation.

Education

RMIT University <i>Ph.D., Computer Science</i>	June 2016 – March 2021 <i>Melbourne, Australia</i>
The University of Melbourne <i>Master of Information Technology</i>	August 2009 – March 2012 <i>Melbourne, Australia</i>
Hunan University <i>Bachelor of Computer Science and Technology</i>	September 2003 – June 2007 <i>Changsha, China</i>

Working Experiences

Research Associate <i>RMIT University & The Australian Research Data Commons (ARDC)</i>	Contract, March 2023 – Present <i>Melbourne, Australia</i>
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- Analyse the search records and feedback gathered from Research Data Australia (RDA) users to acquire a better understanding of their objectives and assess the quality of RDA's search services.
- Construct prompts and utilize LLMs to classify RDA user search queries based on ANZSRC schema, and examine the information requirements of RDA users.
- Provide guidance to a doctoral student on the use of prompt-based techniques with LLMs for product-related QA.

Applied Medical NLP Researcher <i>Tencent Jarvis Lab</i>	June 2021 – Jan 2023 <i>Shenzhen, China</i>
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- Research and develop medical multi-task generative models, and methods for controllable text generation. **Demo:** <https://huggingface.co/spaces/zswvivi/ChineseMedicalT5>
- Explore and create innovative NLP models for medical applications, with a top conference paper published.
- Develop and deploy NLP models for two systems: the intelligent pre-consultation system and the self-diagnosis system. These NLP models would include medical symptom detector, intent classifier, and disease diagnosis model using EHR. The ultimate goal of our systems is to create more intelligent and accurate healthcare systems that can improve patient outcomes.
- Mentor Master and PhD students on developing deep learning models for healthcare-related problems, with one top conference paper published.

Data Analyst <i>Telstra Health</i>	August 2016 – June 2017 <i>Melbourne, Australia</i>
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- Write SQL scripts to perform data cleaning, database management and data analysis.

Research Experience

Research Assistant <i>RMIT University</i>	November 2020 – March 2021 <i>Melbourne, Australia</i>
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- Conduct experiments to investigate whether using question-answering tasks as intermediate training tasks can benefit text classification.
- Examine the outcomes of the experiments, outline the discoveries, and compose a scholarly article.

PhD Candidate <i>RMIT University</i>	June 2016 – November 2020 <i>Melbourne, Australia</i>
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- Thesis Topic: Mining User-generated Texts via Neural Classification.
- Supervisory Team: Prof Xiuzhen (Jenny) Zhang (RMIT), Dr Jey Han Lau (The University of Melbourne), Assoc. Prof Jeffrey Chan (RMIT), Dr Cécile Paris (CSIRO).
- Mentor Master and PhD students on developing deep learning models for NLP problems, with one top conference paper published.

Awards

Best Paper Award, Information Processing & Management journal (SJR Q1), 2019.
1st place at the Melbourne Datathon (\$1500), 2015.

Skills

NLP: Natural Language Generation, Text Matching, Text Classification

Deep Learning: Hugging Face, PyTorch, TensorFlow

Model Training: Distributed Training, Hyper-parameters Tuning, Linux Bash Scripting, Batch Scheduling

Software Development: GitHub, Docker, Linux, Python, Java (Certified Java Developer), SQL (Certified SQL Expert)

Data Analysis: R, Matplotlib

Cloud Computing Services: AWS, Tencent Cloud

Selected Publications

- **Shiwei Zhang**, Jichao Sun, Yu Huang, Xueqi Ding, and Yefeng Zheng. Medical Symptom Detection in Intelligent Pre-Consultation using Bi-directional Hard-Negative Noise Contrastive Estimation. In Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2022.
- **Shiwei Zhang**, Xiuzhen Zhang, Jey Han Lau, Jeffrey Chan, and Cecile Paris. Less is More: Rejecting Unreliable Reviews for Product Question Answering. In Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), 2020.
- Scanlon, Liam, **Shiwei Zhang**, Xiuzhen Zhang, and Mark Sanderson. Evaluation of Cross Domain Text Summarization. In Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR), pages 1853—1856. 2020.
- **Shiwei Zhang**, Jey Han Lau, Xiuzhen Zhang, Jeffrey Chan, and Cecile Paris. Discovering Relevant Reviews for Answering Product-related Queries. In Proceedings of the International Conference on Data Mining (ICDM), pages 1468—1473, 2019.
- **Shiwei Zhang**, Xiuzhen Zhang, Jeffrey Chan, and Paolo Rosso. Irony Detection via Sentiment-based Transfer Learning. Information Processing & Management, 56(5):1633—1644, 2019. **Best Paper Award**