

Terry Pei

☎ +61 42086818 | ✉ xpei8318@uni.sydney.edu.au | in LinkedIn | 🌐 TerryPei

EDUCATION

University of Sydney

Mphil, Major in Computer Science

Publications: *Two ICDM conference papers accepted. Two other projects are still under reviewing.*

Sydney, Australia

Nov 2021 – present

University of Sydney

Master of Information Technology

Publications: *Two code pre-training projects. One of the project is still under pre-training.*

Sydney, Australia

Aug 2020 – Nov 2021

CCNU & UOW Joint Institution

Master of Computer Science

Core courses: *Machine Learning, Intelligence Computing, Advanced programming*

Honor: *Full Scholarship, Entrance Scholarship*

China and Australia

Aug 2019 – May 2020

Central China Normal University

Bachelor of Natural Science

Core courses: *Calculus, linear algebra, statistical probability, data structure*

Honor: *Outstanding Graduate, National Second Prize in University Mathematics Competition, Provincial Second Prize in Blue Bridge Cup Programming Competition*

Wuhan, China

Aug 2015 – May 2019

RESEARCH EXPERIENCE

Self-Attention Gated Model for Cognitive Diagnosis Task

University of Sydney

Mar 2021 – July 2021

Individual Research

- Introduce a hierarchical architecture for simulating the students' behavior and ability.
- Introduce Attention-gate mechanism and conducted the experiments by pytorch.
- Enhance performance of recommendation rating scores.
- The paper has been accepted by ICDM conference. [\[code\]](#)

Programming Language Processing by Contrastive Learning

University of Sydney, Deep Learning Lab

Feb. 2022 – Present

Cooperative Research

- Investigate the contrastive pre-training paradigm for programming language tasks.
- Fine-Tuning the model to fit code-related downstream tasks
- Writing the paper by Latex and the paper is under reviewing.

Code and Comment Pre-training and Fine-Tuning on the Code Tasks

Fudan University, Software Engineering Lab

Sep. 2021 – Feb. 2022

Cooperative Research

- Parse code content and AST structure by parser tools.
- Pre-training the BERT on the pair (Code-Comment) datasets.
- Fine-Tuning the pre-trained model to the downstream tasks of programming.
- The paper has been accepted by ICDM conference. [\[code\]](#)

Representation Learning for Cognitive Medical Question-Answer

University of Sydney, Capstone Project

Mar 2021 – July 2021

Cooperative Research

- Responsible for the design of fusion model.
- Reproduction of the VQATransformer by Tensorflow and Pytorch.
- Extend the task to apply an Auto-Encoder model to the task of Medical Image Search Engine on the CLEF datasets. [\[code\]](#)

Federated Recommendation System by Mixup Latent Features

University of Sydney

Mar 2021 – May 2021

Individual Research

- Data argument with mixup on user-item embedding latent features.
- Implemented federated learning framework.
- Allocate the local client to train and backward the parameters and gradients to aggregate.
- Wrote a research draft by latex to record my study. [\[code\]](#)

Meta-Learning methods for Educational Data Mining

Sep 2020 – Nov 2020

Central China Normal University

Individual Research

- Improve the performance of traditional models by meta-learning methods.
- Building specific auto-encoder model on by pytorch.
- Construct auto-rec system enhanced by meta-learning.

Data Argument for Student's Ability Representation on Q-matrix

June 2019 – Oct 2019

Central China Normal University

Individual Research

- Explore transfer learning methods to construct educational recommendation system.
- Data argument with mixup features and labels.
- Implement Markov Chain Monte Carlo approach to train cognitive diagnosis models.

Artificial Intelligence Research Assistant

May 2017 – Nov 2018

Central China Normal University

Individual Research

- Implemented basic deep learning methods(CNN, RNN, Auto-Encoder) to practice some basic projects.
- Visualized pre-processing data to show collaboration.
- Compared the performance of the ConvMF method with the traditional PMF method, acting on the movielens dataset.

PROFESSIONAL PROJECTS

Database Application Development | *PostgreSQL, Python, Flask*

June 2020 – Sep 2020

- Create an entity relationship diagram.
- Complete postgresQL coding with appropriate constraints.
- Implement function of adding, updating patient lists by transaction and functional coding.
- Develop a simple full-stack web application with Flask, with the functions of login in, alter database, control of authority and so on.

TECHNICAL SKILLS

Languages: Python, Pytorch, Huggingface, Swift, C/C++, SQL (Postgres), Latex, Markdown

Developer Tools: Git, Docker, Google Cloud Platform, VS Code, Anaconda

Libraries: Pytorch, Keras, NumPy, Pandas, Matplotlib