Liangyu Nie

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Education

- **The University of Texas at Dallas** — Texas, US
  PhD in Computer Science — *Sept.2023 - June.2028(Expected)*
- **University of Birmingham** — Birmingham, UK
  Master of Science in Advanced Computer Science — *Sept.2022 - Sept.2023(Expected)*
- **Royal Melbourne Institute of Technology University** — Melbourne, Australia
  Bachelor of Computer Science, GPA: 3.9/4.0 — *Mar. 2019 - Dec. 2021*

Publications

Does the Model Understand What It Is Doing? Let It Generate Task Instruction
Liangy Nie,Wenpeng Yin
ACL2023 under-review

Robustness of Learning from Task Instructions
Jiasheng Gu,Hanzi Xu,**LiangyuNie**,WenpengYin
Pre-print

Question answering algorithm based on deep learning
LiangyuNie,Jiatong Ye
EITCE2021

Projects

- **STS-benchmark**: Semantic Textual Similarity task

  - Ensembled eight models(bert-base-uncased,robert-base,deberta-base,stsbmpnet-base,stsb-roberta-base,stsb-roberta-large,bert-baseuncased-stsb,stsb-distilroberta-base) to finish the task
  - Get 0.9309 as the result, SOTA of this task was 0.929 by SMART-ROBERTA-Large

- **Kg-CLUE**: Large-scale Chinese open source knowledge graph question and answer benchmark

  - Use BERT and Roberta build baseline NER+SIM pipeline
  - Create judgement for kgCLUE(EM,F1 score)

- **Lipstick Finder**: A lipstick recommendation system

  - Develop an app use three algorithms(Recognition,Makeup,Recommendation) to find a mouth of user and let user makeup the lipstick virtually,get a recommendation for a user

- **Multi-model physiological signal emotion recognition**: Multi-model emotion recognition system

  - Use DEAP to train a model to recognize emotion
  - Transform EEG(1D signal)to 2Dmatrix
  - Use 2dCNN to extract spatial information
  - LSTM extract time-domain

- **Multi-modal dialogue**: A multimodal dialogue system based on JD dataset

  - Designed a Multimodal Hierarchical model
  - Added attention layer into MHRED model

- **Netflix Movie Recommendation System**: A recommendation system based on Netflix Prize dataset

  - Predict the rating that a user would give to a movie that he has not yet rated. Minimize the difference between predicted and actual rating (RMSE and MAPE)

- **AI tutor**: A online website teach English in speaking,listening,reading and writing also teach dancing and singing

  - Designed an online AI tutor, which can teach student English in Speaking, Listening, Reading and Writing, also teach dancing and singing.

- Developed the website's front-end using Vue.js.
- Used CNN for English speaking listening and reading also used RNN for writing.
- Utilised LSTM to fix the long-term dependency problem.
- Applied openpose to identify the dance action.

- **Flapper Bird Using Reinforcement-Learning**: a flappy bird game using C++ and reinforcement-learning with Deep-Q learning

  - Developed a flappy bird game using C++ and reinforcement-learning with Deep-Q learning algorithm to train the bird play this game.

- **Computer Remoter**: A app to control the computer to enter the keyboard and mouse

  - Used OpenCV to identify the finger's action and numbers that theuser wants.
  - Combined with two usual individual cameras and compared their performance, choosing the binocular camera because of the better results

Work&Research Experience

- **Hong Kong University of Science and Technology** — Hongkong SAR, China
  Research Assistant — *June.2022 – October.2022*
  - Researching in personal chatbot under Prof.Kani CHEN

- **Shanghai Jiaotong University** — Shanghai, China
  Teaching Assistant — *June.2022 – July.2022*
  - Teaching Algorithm and data science course with Prof.Xiangdong An

- **Temple University** — Philadelphia, US
  Research Intern — *Apr.2022 – Jan.2023*
  - Researching in NLP instruction under Prof.Wenpeng Yin

- **College of William & Mary** — Virginia, US
  Research Intern — *Mar.2022 – Oct.2022*
  - Researching in Memory Based Continual Learning under Prof.Huajie Shao