MOU, XIANGYANG

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SKILLS

- **Programming Languages:** Python, Android, Java, Matlab, JavaScript, HTML, C#, C/C++
- **Tools:** Pytorch, Huggingface, TensorFlow, RabbitMQ, Scikit-Learn, OpenCV, Git, AWS, MongoDB, Docker, etc.
- **Specialty:** Question Answering, Information Retrieval, Ranking, Multimodal Modeling, Gesture Recognition, HCI

EDUCATION

- **Ph.D. in Computer System Engineering** 08/2017 – 05/2022
  Rensselaer Polytechnic Institute (RPI) Troy, NY
- **Master of Science in Electrical Engineering** 01/2015 – 05/2016
  Washington University in St. Louis (WUSTL) St. Louis, MO
- **Bachelor of Engineering in Electronic Information Engineering** 08/2010 – 07/2014
  Xidian University (XDU) Xi'an, China

WORK EXPERIENCE

Research Scientist @ Meta 06/2022 – Present

- Built the state-of-the-art recommendation systems for Facebook and Instagram feeds.
  - Worked with: Python, Pytorch, Transformer, SQL, etc.

Research Assistant @ RPI-IBM AI Research Collaboration 02/2020 – 12/2021

- Studied the Book QA task with latest Open-Domain QA techniques and published the work to **TACL**. [Github]
- Increased the evidence retrieval result for the NarrativeQA task by **>10%** with distant supervision methods.
- Achieved the new state-of-the-art performance with a **6.8%** improvement over the previous best results.
  - Worked with: Python, Pytorch, Huggingface, BART, T5, BERT, LSTM, Spacy, etc.

Research Internship @ IBM Watson Research Center 09/2019 – 11/2019

- Studied complementary evidence retrieval for multi-hop reasoning and published the work to EACL.
- Achieved **up-to-20%** improvements in multi-hop retrieval over the baselines by our proposed loss function.
  - Worked with: Python, Pytorch, Huggingface, BERT, Spacy, nltk, etc.

Technical Team Lead @ RPI-IBM Cognitive and Immersive Systems Lab 05/2018 – 12/2021

- Designed and built a scalable ML platform for rich human activity detections.
- Worked on the full lifecycle of ML development and achieved **real-time** Taiji gesture recognition and head pose detection with HMM models and CNN models, respectively.
- Achieved pointing recognition by building a least square regressor.
- Achieved oral wake-up word detection and intent recognition by leveraging IBM Cloud APIs.
- Saved **>50% of the time** for the camera calibration process by optimizing and automating the pipeline.
- Incubated **>5** leading HCI publications by developing a set of utility functions, including RESTful APIs, a web-based dashboard, visualization tools, database storage, etc.
- Led **3** undergraduate researcher teams, performed code review and wrote detailed documentations.
  - The platform was used in **≥3 RPI courses**. Its success was also **reported by NYTimes**, **AP**, etc.
  - Worked with: Python, C#, Matlab, OpenCV, HMM, CNN, HTML, NodeJS, RabbitMQ, MongoDB, Git, etc.

Teaching Assistant @ RPI Intelligent Systems Lab 07/2017 – 05/2018

- Developed an eye-controlled Whack-A-Mole game on Android devices.
- Worked on the full lifecycle of ML development and achieved an accuracy of **>60%** for gaze tracking on a 5-inch screen by using a CNN-based model.
- Achieved **real-time** gaze tracking on mobile devices by distributed computing techniques.
  - Worked with: Python, Matlab, Keras, Tensorflow, CNN, Android, Game Development, etc.

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PUBLICATION SELECTIONS

[13] Yisi Sang, **Xiangyang Mou**, Mo Yu, Dakuo Wang, Jing Li, Jeffrey Stanton. Personality Prediction of Narrative Characters from Movie Scripts. In *EMNLP*, 2022.

[12] Yisi Sang, **Xiangyang Mou**, Mo Yu, Jing Li, Jeffrey Stanton. A Survey of Machine Narrative Reading Comprehension Assessments. In *IJCAI*, 2022.

[11] Yisi Sang, **Xiangyang Mou**, Mo Yu, Shunyu Yao, Jing Li, Jeffrey Stanton. Machine Narrative Comprehension in a Fictional Characters Personality Prediction Task. In *NAACL SRW*, 2022.

[10] Yisi Sang, **Xiangyang Mou**, Mo Yu, Shunyu Yao, Jing Li, Jeffrey Stanton. TVShowGuess: Character Comprehension in Stories as Speaker Guessing. In *NAACL*, 2022.

[9] **Xiangyang Mou**, Chenghao Yang, Mo Yu, Bingsheng Yao, Xiaoxiao Guo, Saloni Potdar, Hui Su. Narrative Question Answering with Cutting-Edge Open-Domain QA Techniques: A Comprehensive Study. In *TACL*, 2021.

[8] **Xiangyang Mou**, Mo Yu, Bingsheng Yao, Chenghao Yang, Xiaoxiao Guo, Saloni Potdar, Hui Su. Frustratingly Hard Evidence Retrieval for QA Over Books. In *ACL NUSE Workshop*, 2021.

[7] **Xiangyang Mou**, Mo Yu, Shiyu Chang, Yufei Feng, Li Zhang, and Hui Su. Complementary Evidence Identification in Open-Domain Question Answering. In *EACL*, 2021.

[6] Rahul R Divekar, Hui Su, Jeffrey O Kephart, Maira Gratti DeBayser, Melina Guerra, **Xiangyang Mou**, et al. Humaine: Human multi-agent immersive negotiation competition. In *CHI*, 2020.

[5] **Xiangyang Mou**, Brandyn Sigouin, Ian Steenstra, Hui Su. Multimodal Dialogue State Tracking By QA Approach with Data Augmentation. In *AAAI 2020 DSTC8 Workshop*, 2020.

[4] Matthew Peveler, Jeffery O Kephart, **Xiangyang Mou**, Gordon Clement, Hui Su. A Virtual Mouse Interface for Supporting Multi-user Interactions. In *HCI International*, 2020.

[3] Rahul R Divekar, Jeffrey O Kephart, **Xiangyang Mou**, Lisha Chen, Hui Su. You Talkin'to Me? A Practical Attention-aware Embodied Agent. In *IFIP Conference on Human-Computer Interaction*, 2019.

[2] Rahul R. Divekar, **Xiangyang Mou**, Lisha Chen, Maira G. Melina A. Guerra, and Hui Su. Embodied Conversational AI Agents in a Multi-modal Multi-agent Competitive Dialogue. In *IJCAI*, 2019.

[1] David Allen, Rahul R. Divekar, Jaimie Drozdal, **Xiangyang Mou**, et al. The Rensselaer Mandarin Project—a Cognitive and Immersive Language Learning Environment. In *AAAI*, 2019.

PATENTS

[2] Complementary evidence identification in natural language inference [Appl. No. 16989866] (Pending)

[1] Embodied negotiation agent and platform. [Patent No. 11437017]