YUTING NING

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EDUCATION

University of Science and Technology of China June, 2024 (expected)
M.S. in Computer Science and Technology, Advisor: Enhong Chen
Research Interest: Data Mining, Natural Language Processing, Intelligent Education
GPA: 4.11 / 4.3 (Ranking: 1/116)

University of Science and Technology of China June, 2021
B.S. in Computer Science and Technology
GPA: 3.93 / 4.3 (Ranking: 5/253)

RESEARCH EXPERIENCE

Visiting Student, University of Southern California Jul. 2023 - Present
INK Lab, Advisor: Xiang Ren Los Angeles, CA

- **Project:** Long-tail Knowledge Generation
  - Proposed a logic-induced knowledge search framework LINK for systematically generating long-tail knowledge statements, which are challenging for LLMs.
  - Constructed a dataset LINT with 40K knowledge statements.
  - Evaluated the generation ability and reasoning ability on long-tail knowledge statements of LLMs.
  - **Publication:** One paper is submitted.

Graduate Research Assistant, University of Science and Technology of China Sep. 2021 - Present
BDAA-BASE Group, Advisor: Enhong Chen Hefei, China

- **Project:** Natural Language Processing in Intelligent Education
  - Tackling challenges related to the understanding of educational resources.
  - Designed a contrastive pre-training method for holistically understanding mathematical questions.
  - **Publication:** One paper published at AAAI'23.
- **Project:** Evaluation of Large Language Models
  - Proposed an adaptive testing framework for LLM evaluation.
  - Conducted fine-grained diagnostics of LLMs from three aspects of human-level abilities.
  - **Publication:** One paper is submitted.

Research Intern, Microsoft Research Asia Jul. 2020 - Dec. 2020
Social Computing Group, Mentor: Fangzhao Wu and Xing Xie Beijing, China

- Mainly worked on news understanding and recommendation.
- Implemented many advanced news recommendation methods.

Undergraduate Research Assistant, University of Science and Technology of China Mar. 2020 - Jul. 2020
Advisor: Qi Liu Hefei, China

- **Project:** Federated User Modeling
  - Worked on a hierarchical personalized federated user modeling framework.
  - **Publication:** One paper published at WWW'21 and one paper published at TOIS.

PUBLICATIONS & PREPRINTS

1. **Yuting Ning**, Zhenya Huang, Enhong Chen, Shiwei Tong, Zheng Gong, Shijin Wang. Towards a Holistic Understanding of Mathematical Questions with Contrastive Pre-training. *The 37th AAAI Conference on Artificial Intelligence (AAAI)*, 2023. [PDF] [Code]

2. **Yuting Ning**, Jiayu Liu, Longhu Qin, Tong Xiao, Shangzi Xue, Zhenya Huang, Qi Liu, Enhong Chen, Jinze Wu. A Novel Approach for Auto-Formulation of Optimization Problems. *arXiv preprint*, 2023. [PDF] [Code]

3. Yan Zhuang, Qi Liu, **Yuting Ning**, Weizhe Huang, Rui Lv, Zhenya Huang, Guanhao Zhao, Zheng Zhang, Qingyang Mao, Shijin Wang, Enhong Chen. Efficiently Measuring the Cognitive Ability of LLMs: An Adaptive Testing Perspective. *Submitted*, 2023. [PDF]

4. Qi Liu, Jinze Wu, Hao Wang, Zhenya Huang, **Yuting Ning**, Ming Chen, Enhong Chen. Federated User Modeling from Hierarchical Information. *ACM Transactions on Information Systems (TOIS)*, 2023. [PDF]

5. Ye Liu, Han Wu, Zhenya Huang, Hao Wang, **Yuting Ning**, Jianhui Ma, Qi Liu, Enhong Chen. TechPat: Technical Phrase Extraction for Patent Mining. *ACM Transactions on Knowledge Discovery from Data (TKDE)*, 2023. [PDF]

6. Zheng Gong, Guifeng Wang, Ying Sun, Qi Liu, **Yuting Ning**, Hui Xiong, Jingyu Peng. Beyond Homophily: Robust Graph Anomaly Detection via Neural Sparsification. *32nd International Joint Conference on Artificial Intelligence (IJCAI2023)*, 2023. [PDF]

7. Jinze Wu, Qi Liu, Zhenya Huang, **Yuting Ning**, Hao Wang, Enhong Chen, Jinfeng Yi and Bowen Zhou. Hierarchical Personalized Federated Learning for User Modeling. *The 30th International World Wide Web Conference (WWW)*, 2021. [PDF]

8. **Yuting Ning**, Ye Liu, Zhenya Huang, Haoyang Bi, Qi Liu, Enhong Chen, Dan Zhang. Stable and Diverse: A Unified Approach for Computerized Adaptive Testing. *2021 IEEE 7th International Conference on Cloud Computing and Intelligent Systems (CCIS)*, 2021. [PDF]

COMPETITION EXPERIENCE

- **3rd place in NeurIPS Competition**: Natural Language for Optimization [Web] 2022
- **Silver Prize (top 5%) in Kaggle Competition**: Feedback Prize - Evaluating Student Writing [Web] 2022
- **2rd place in MOOCCube Competition**: Predicting Student Performances 2021

PROJECTS

EduNLP [Code] [Doc] Sep. 2021 - Present

- Leading the project and aiming at an advanced and unified NLP library for multi-model educational resources.
- Implemented several educational question representation models and pre-training methods.
- Empowered downstream tasks in intelligent education with pre-trained language models.
- Built the ModelHub to effectively manage the pre-trained models.

Intelligent Education Knowledge Graph (LUNA) [Web] Feb. 2021 - Jul. 2023

- Aiming to analyze massive educational resources deeply and provide intelligent education services.
- Developed the question search service with elasticsearch and vector-based search methods.
- Boosted question-based services with pre-trained language models.

News Recommendation [Code] Jun. 2020 - Jul. 2020

- Implemented several news classification and recommendation methods in both PyTorch and Keras.

SELECTED HONORS & AWARDS

First Prize Academic Scholarship, University of Science and Technology of China 2021, 2022, 2023
Top 5% Outstanding Graduates of USTC, University of Science and Technology of China 2021
Outstanding Graduates of Anhui Province, Education Department of Anhui Province 2021
Baosteel Outstanding Student Scholarship (1/1800+ in USTC), Baosteel Education Fund 2020
National Scholarship, Ministry of Education of the People's Republic of China 2019

SKILLS

Programming Languages Python, C, SQL, HTML
Frameworks Pytorch, Keras, Flask
Tools LaTeX, Git