Rehema Abulikemu

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Research interests

Human Computer Interaction, Software Engineering, AI-powered Interactive System, Augmented and Virtual Reality (AR/VR), Accessibility, Privacy & Security

Education

2023.08 – Present **Virginia Tech** – Blacksburg, US
Ph.D. in Computer Science

2017.09 – 2022.07 **Peking University** – Beijing, China
B.S. in Data Science and Big Data Technology

Research experience

2023.08 – 2024.10 **Visualizing Student-AI Interactions to Understand Students' Mental Models in Programming Education at Scale**

Advisor: Yan Chen (Virginia Tech).

- Goal: Assist instructors of introductory CS programming courses in easily monitoring students' AI-assisted programming processes in real-time and at scale.
- Conducted a formative study to understand instructors' needs.
- Collected real coding data from students in large programming lecture settings.
- Developed an AI-assisted interactive system prototype to visualize student activities and conducting a user study to evaluate the system's effectiveness.

2022.06 – 2022.12 **Designing a "Study With Me" Prototype to Promote Remote Self-Regulated Learning**

Mentor: Xinyue Chen (University of Michigan).

- Goal: Improve the online self-regulated learning experience of students when they study from home.
- Conducted need-finding study to find what are the needs and challenges of students when they watch "Virtual Study Room" livestreaming by content analysis and interviewing.

2022.01 – 2022.06 **OJ Problems Recommendation based on Code Clone Detection Technology**

Supervisor: Tao Xie (Peking University).

- Goal: Automatically recommending algorithm problems to people conducting technical software engineering interviews.
- Used an approach based on the similarity of code implementations, which includes two techniques: 1) based on NiCad, 2) based on the information retrieval technique. Using HumanEval dataset as the original problems and MBPP and CodesearchNet datasets as the recommendation dataset for experiments. And all code of this work is written in Python.

2022.02 – 2022.06 **Data Processing and Visualization of Chinese Administrative Division Network**

Supervisor: Hongmou Zhang (Peking University).

- Goal: Construct a network dataset for further network analysis.

- Processed the Code of Administrative Division from 2012 to 2020 based on the patterns of the code. Constructed a big network of 9 layer, based on the affiliation of administrative divisions and changes between adjacent years.

- All the code was written in Python. Pandas and numpy were used for data processing. Networkx, matplotlib, multinetx were used for visualization.

Recent Course Projects

2024.10 **Movie Review System**: Develop user interface and database for movie review system using React.js and MySQL

2024.10 **Ducky**: Build a LLM-based programming assistant with multiple functionalities using a Python framework streamlit.

Teaching experience

2024.08-2024.12 GTA for CS5664: Social Media Analytics

2024.02-2024.05 GTA for CS1064: Introduction to Programming in Python

2023.08-2023.12 GTA for CS1064: Introduction to Programming in Python

Honors and scholarships

2017.12 The First Prize of Freshman Scholarship (Peking University)

Leadership Experiences

2018.09-2019.06 **Assistant Minister, Student union of Yuanpei College, Peking University**

- Responsible for organizing activities to serve students in minority communities

Skills and Interests

Programming

Python, JavaScript, React, C++/C, SQL, C#, SAS, HTML, CSS, D3, Linux/Bash, Git

Languages

English (fluent), Chinese (native), Uighur (native), Korean (Intermediate)