Rehema Abulikemu

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EDUCATION BACKGROUND

Peking University		Beijing, China
B.S. in Data Science and Big Data Technology	GPA: 3.38/4.0	09/2017 - 07/2022

RESEARCH INTERESTS

- I am broadly interested in researches that have practical contribution and give practical sense. More specifically, my interests include Human-Computer Interaction, Software Engineering, Accessibility, Security & Privacy and so on.

HONORS AND SCHOLARSHIP

2017 The First Prize of Freshman Scholarship, PKU   12/2017

RESEARCH EXPERIENCE

OJ Problem Description Generation via Code Summary Generated by Large Language Models   10/2022-present

Supervisor : Tao Xie (School of Computer Science, Peking University)

- Goal: OJ Problem recommendation based on the description generation technique: given a code snippet, generating multiple problem descriptions of the code snippet, and using clustering algorithm to classification screening the results and recommend the descriptions as problem.
- Trained large language models based on Transformer. Given a code snippet, the models will generate code summary. I am still working the other parts of this project.

Need-finding study of "Virtual Study Room"   06/2022-09/2022

Mentor : Xinyue Chen (University of Michigan)

- Goal: Aiming to 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. This need-finding study was submitted to CHI2023.

OJ Problems Recommendation based on Code Clone Detection Technology   (Graduation thesis)   01/2022-06/2022

Supervisor : Tao Xie (School of Computer Science, Peking University)

- Goal: Focusing on recommending a large number and variety of algorithm problems of similar difficulties automatically for interviewers of programming related jobs.
- 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.

Data Processing and Visualization of Chinese Administrative Division Network   02/2022-06/2022

Supervisor : Hongmou Zhang (Department of Urban and Regional Management, Peking University)

- Processed the Code of Administrative Division from 2012 to 2020 based on the patterns of the code.
- Constructed trees for the data of each year according to the affiliation of administrative divisions and visualized them. Connected these trees based on changes like code-change, name-change, division and consolidation of administrative divisions and built a big network, and visualize it.
- All the code was written in Python. Pandas and numpy were used for data processing. Networkx, matplotlib, multinetx were used for visualization.

COURSE PROJECTS

Text Retrieval Tool   (code)   05/2021

- I made a simple tool based on Observer pattern with Python. Its GUI was based on tkinter, and data processing was based on Pandas, numpy, and scipy. A synonym detection algorithm was used.

Detection and recognition of ticket QR code   (code)   12/2020

- From the scanning image of a ticket, identified the position of the ticket; put the ticket right by perspective transformation; found the position of the QR code on the ticket; enhanced the image; redrew the QR code and recognized it.
- The accuracy is 99% in 100 pictures of experimental data.

Book sales management system   11/2020

- We designed and implemented a platform for buyers and sellers to trade books online. The front-end was written in javascript, HTML and CSS. Database and back-end was based on Django.

VOLUNTEER AND LEADERSHIP EXPERIENCE

Assistant Minister, Student union of Yuanpei College, Peking University 09/2018-06/2019

- Responsible for organizing activities to serve students in minority communities.

LANGUAGES AND SKILLS

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

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

Software: MS Office, Adobe Photoshop

Other Skills: LaTeX, Machine Learning