

Rehema Abulikemu

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EDUCATION BACKGROUND

Peking University

Bachelor of Data Science and Big Data Technology

GPA: 3.38/4.0

Beijing, China

Aug 2017 - July.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, Accessibility, Software Engineering, Social Computing, Information Security and so on.

HONORS AND SCHOLARSHIP

2017 The First Prize of Freshman Scholarship, PKU

Dec 2017

PUBLICATIONS

"Come and study with me in Hogwarts": Current Practices and Challenges of Self-Regulated Learning in Virtual Study Room
Xinyue Chen, Rehema Abulikemu, Ke Li, Pengyi Zhang. CHI2023 (Under review)

RESEARCH EXPERIENCE

Designing a "Study With Me" Prototype to Promote Remote Self-Regulated Learning

06.2022-present

Mentor : [Xinyue Chen](#) (University of Michigan)

- In this work, we aim to improve the online self-regulated learning experience of students when they study from home.
- First, we did a need-finding study to understand what are the needs and challenges students facing when students watch "study with me" videos/livestreaming online to help them have better self-regulated learning experience through content analysis and interviewing 20 participants. This need-finding study is under review in CHI2023.
- Based on the need-finding study, we are designing a web system prototype using React.js and Django. This system enable students to start study livestreaming more flexibly with features like goal-oriented peer matching and time-tracking.

OJ Problems Recommendation based on Code Clone Detection Technology

01.2022-06.2022

Supervisor : [Tao Xie](#) (Peking University)

- In this work, we focus on recommending a large number and variety of algorithm problems of similar difficulties automatically for interviewers of programming related jobs.
- In order to recommend a large number and variety of algorithm problems of similar difficulties, we use an approach based on the similarity of code implementations, which includes two techniques, one is based on an existing code clone detection tool named NiCad and the other is based on the information retrieval technique.
- We used 164 problems in the HumanEval dataset as the original problems given to the recommendation engine, and used about 400,000 problems in the MBPP and CodesearchNet datasets as the recommendation dataset for experiments. And all code of this work is written in Python.

Data Processing and Visualization of Chinese Administrative Division Network

02.2022-06.2022

Supervisor : [Hongmou Zhang](#) (Peking University)

- First, we processed the Code of Administrative Division from 2012 to 2020 based on the patterns of the code.
- And we constructed trees for the data of each year according to the affiliation of administrative divisions and visualized them.
- Finally, we 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. First, I implemented word segmentation to the poems and got all the words. Then I calculated TF-IDF matrix and normalized it, and calculated Cosine similarity matrix. And I set a threshold to filter the synonyms and made a dictionary
- It can subscribe the poets, keywords and mixture of both.

Detection and recognition of ticket QR code [\(code\)](#)

12.2020

- From the scanning image of a ticket, we identified the position of the ticket, and put the ticket right by perspective transformation. Then, we found the position of the QR code on the ticket, and enhanced the image by filtering, noise reduction, sharpening, morphological operation, etc.. Finally we redrew the QR code and recognized it.
- The accuracy is 99% in 100 pictures of experimental data.
- All code is written in Python.

Book sales management system

11.2022

- We designed and implemented a platform for buyers and sellers to trade books online. First we conducted a demand analysis and drew the E-R Model. Then we transform the E-R Model to Relation Model and drew the System Flowchart. Finally, we designed and implemented main function page.
- The front-end was written in javascript, HTML and CSS. Database and back-end was based on Django. And interaction between front-end and database was based on POST. I was mainly responsible for the front-end part.

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

Hobbies: Cycling, Badminton, Hiking, Photography, Cooking