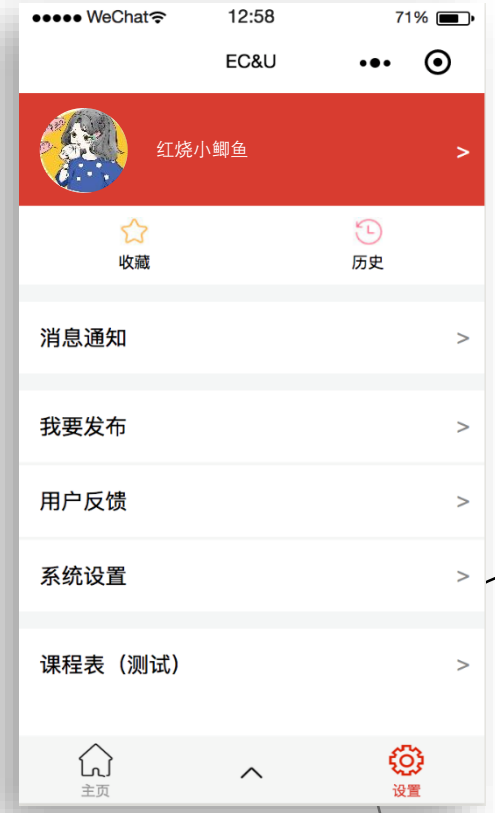
EC&U

Group project

A campus information aggregation and recommendation system for East China Normal University (ECNU)



Problem

Nowadays, the Internet has become an important source of information for people. However, massive information can also cause obstacles.

For students and the faculty in the university, there are countless official accounts of clubs, organizations, and schools to follow, while their accounts' id may not even be known. Then, how to efficiently get useful news about activities going on has become a challenge.

Basic Information

It is a WeChat applet which can automatically crawl down data from campus news and then extract activity information to form newsletters. All the news are well-classified and evaluated with popularity before recommendation.

My role

Function design • UI design • Information Processing

Timeline

2018.10 – 2019.09

01. Market & Technical Research

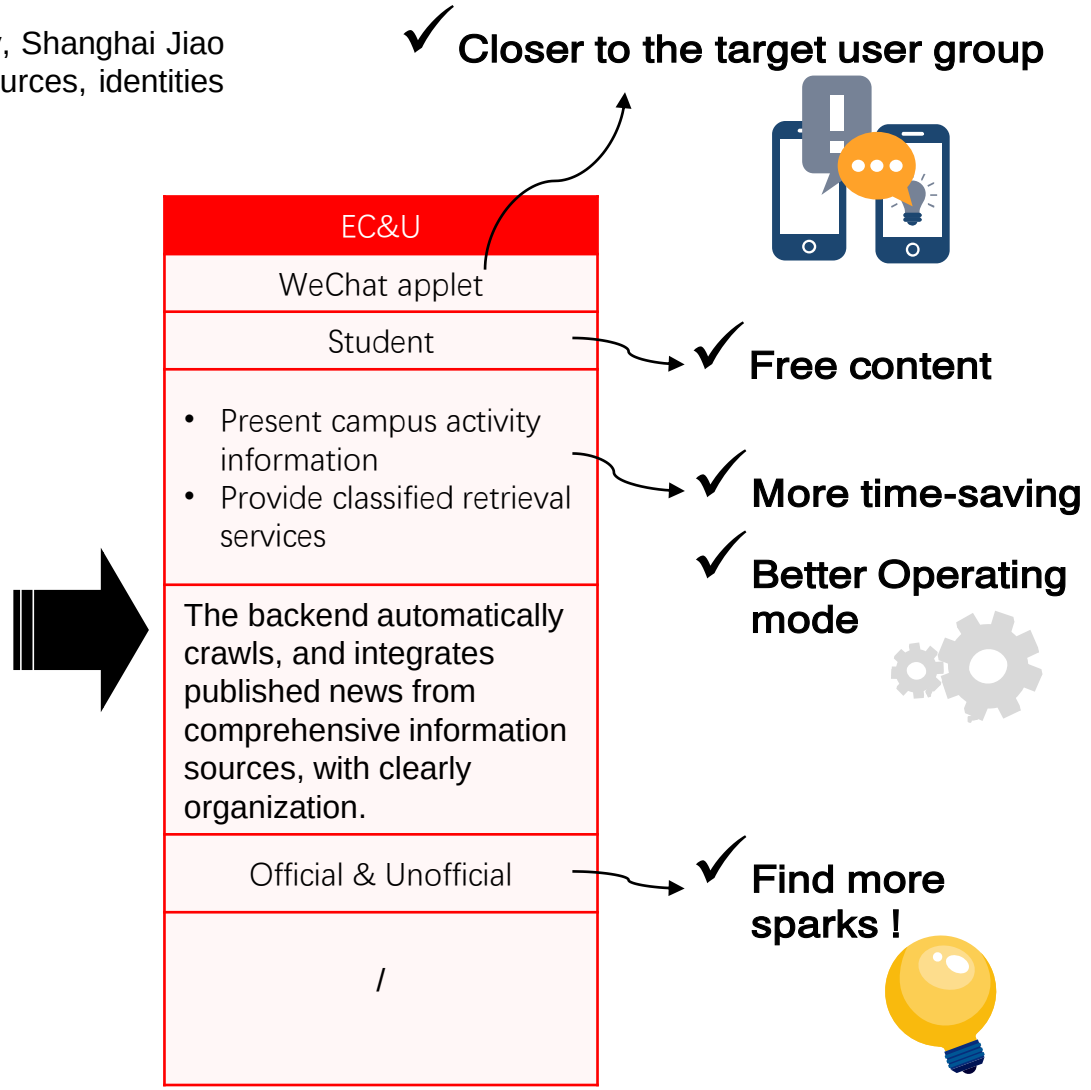
02. Function & UI Design

03. Development & Testing

Market Research

We launched a survey of similar products from other top universities (e.g. Fudan University, Shanghai Jiao Tong University). They are compared from five dimensions: main functions, information sources, identities of developer, features, and user experience.

Product Name	Fudan Plus	i Jiao
Form	WeChat applet	WeChat applet
Developer	Student	Official
Main Functions	• Gather news • Search for courses • Search for empty classrooms • Recruitment information • Venue reservation	• Publish campus activities • Show booking status
Feature	• Integrating information release and campus services limited content, mostly official propaganda • No campus activity information	• Simple function • Classified view according to “the latest" and "hot“ • Simple interface • Prominent focus • Activities disorderly sorted
Info. Sources	Publish in school, open to society	Official
Experience	• Strong interactivity • Simple news content • Unable to meet needs without activity information	• Difficult to retrieve useful information • Time-consuming



According to the research work, we specify the position of EC&U applet.

UI Design

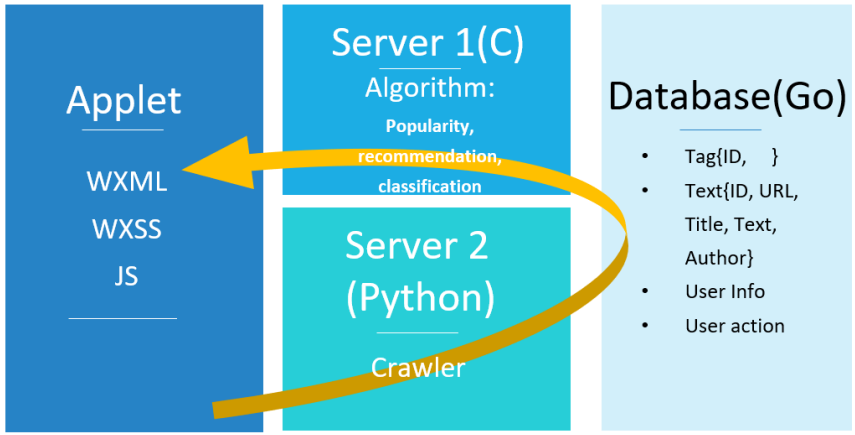
Hand-made Logo

The logo stems from a combination of character ‘E’ and ‘&.’ It is designed by me and completed by all group members with an iPencil on iPad.

Software-made Prototype

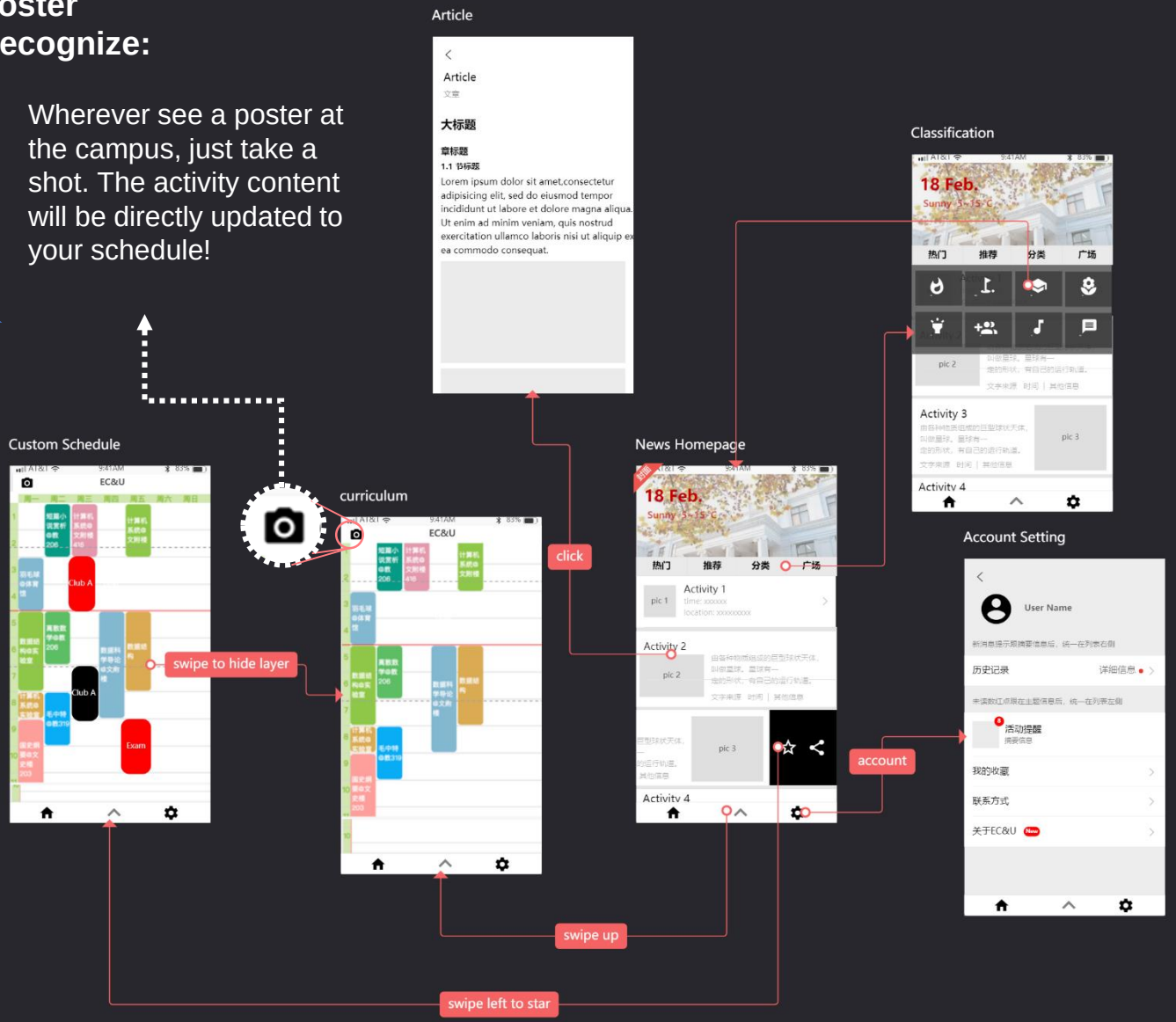
Technology Architecture

We use 2 servers to run data processing and auto-crawling. The ids of official accounts are also obtained by crawler before a manual check. There are around 200 official ids in total.



Poster Recognize:

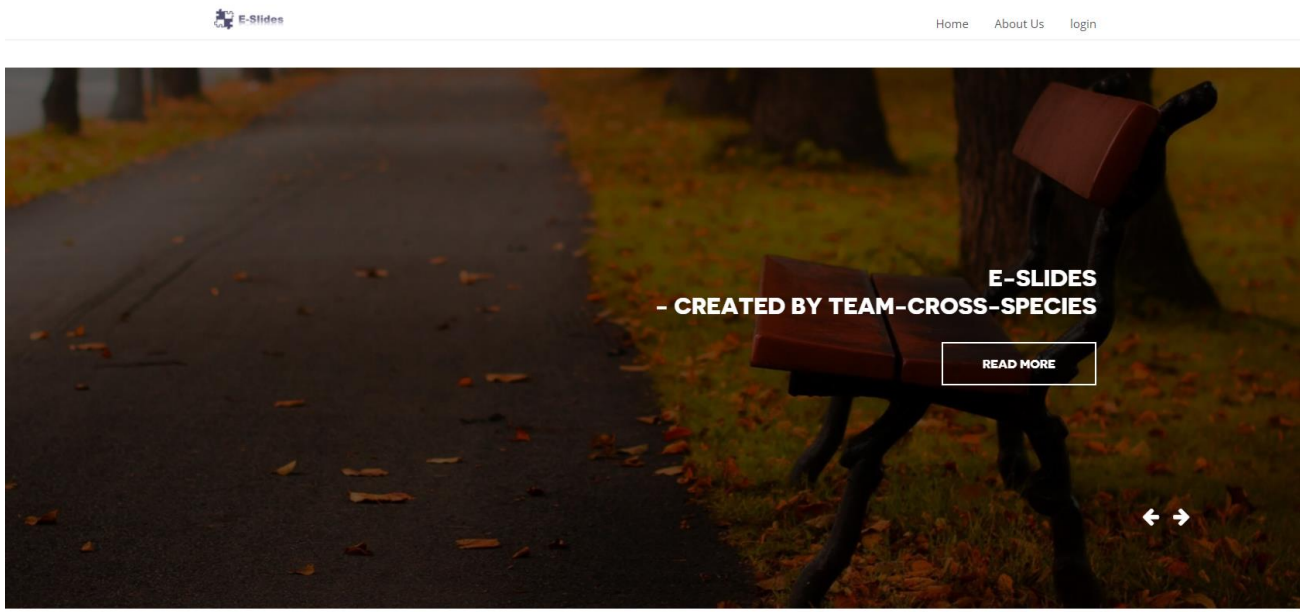
Wherever see a poster at the campus, just take a shot. The activity content will be directly updated to your schedule!



E-Slides

Group project

A platform for automatic generation of teaching slides



User Research

- User interview
- Questionnaire

Scope of pain points

Range of questionnaire

Basic Information

In daily life, we notice that teachers often encounter problems such as cumbersome operations and inconvenient course iterations in the course of lesson preparation. In addition, for teachers in the field of science and technology, writing codes and formulas in PowerPoint is an even more tedious process.

Therefore, we intend to create a platform for automatic generation of teaching courseware, so that teachers can focus on content writing and reduce the time spent on repetitive work.

My role

- In charge of project management
- Led in user research
- Created the prototype
- Constructed technical architecture
- Participated in development

Timeline

07/2020 – 10/2020

Function Definition

1. Supporting online input and edit /upload .md files
2. Automatic layout of slide content
3. Real-time compilation preview
4. Free download of slides
5. Long-term stable backup storage
6. Compatible with formula and code
7. Providing Jupyter service to demo code
8. Providing mind-map to help sort out the outline

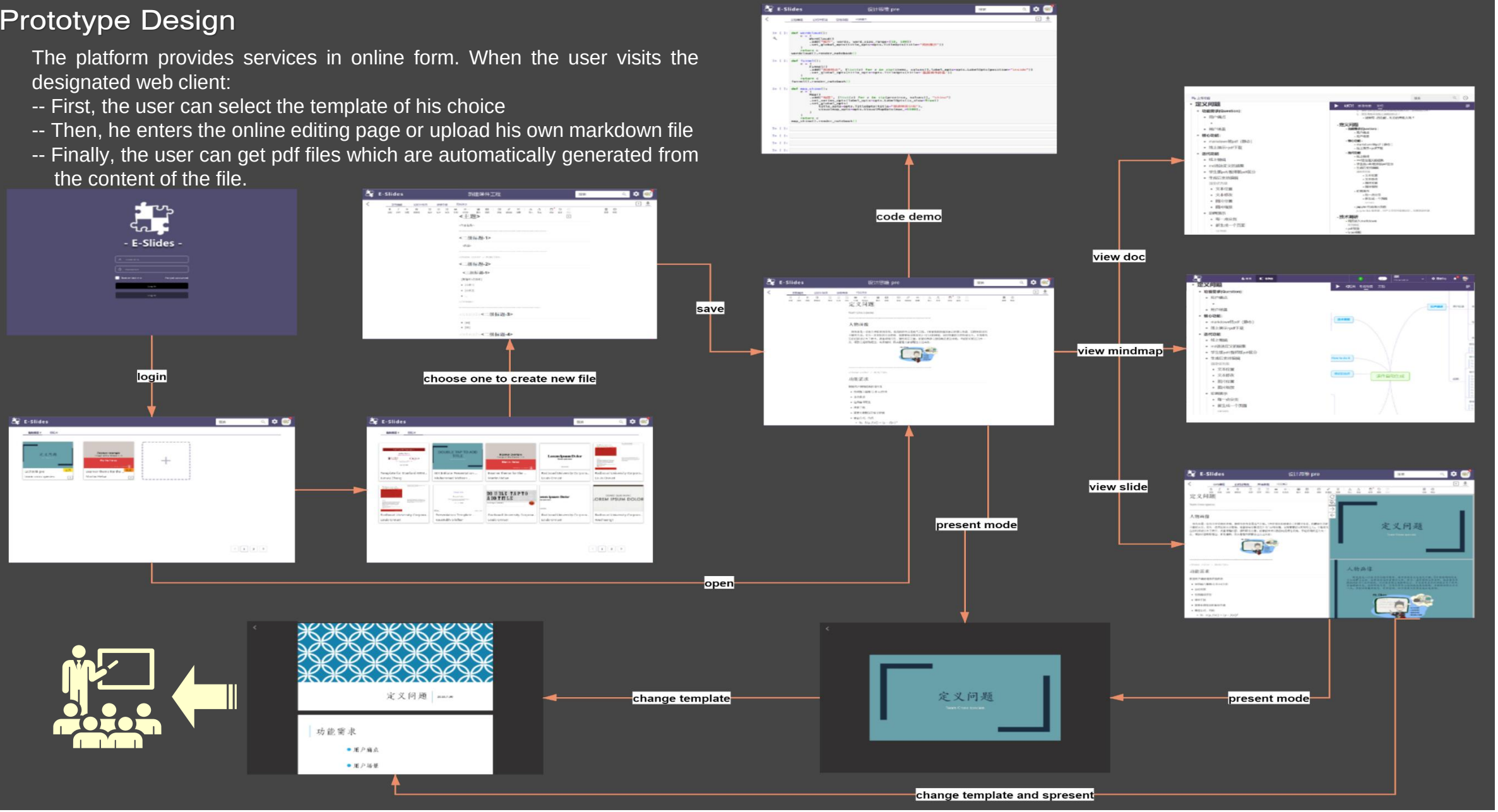
Prototype Design

The platform provides services in online form. When the user visits the designated web client:

-- First, the user can select the template of his choice

-- Then, he enters the online editing page or upload his own markdown file

-- Finally, the user can get pdf files which are automatically generated from the content of the file.



Technology Architecture

Language

Python + HTML + CSS + JS

Environment

Windows 10

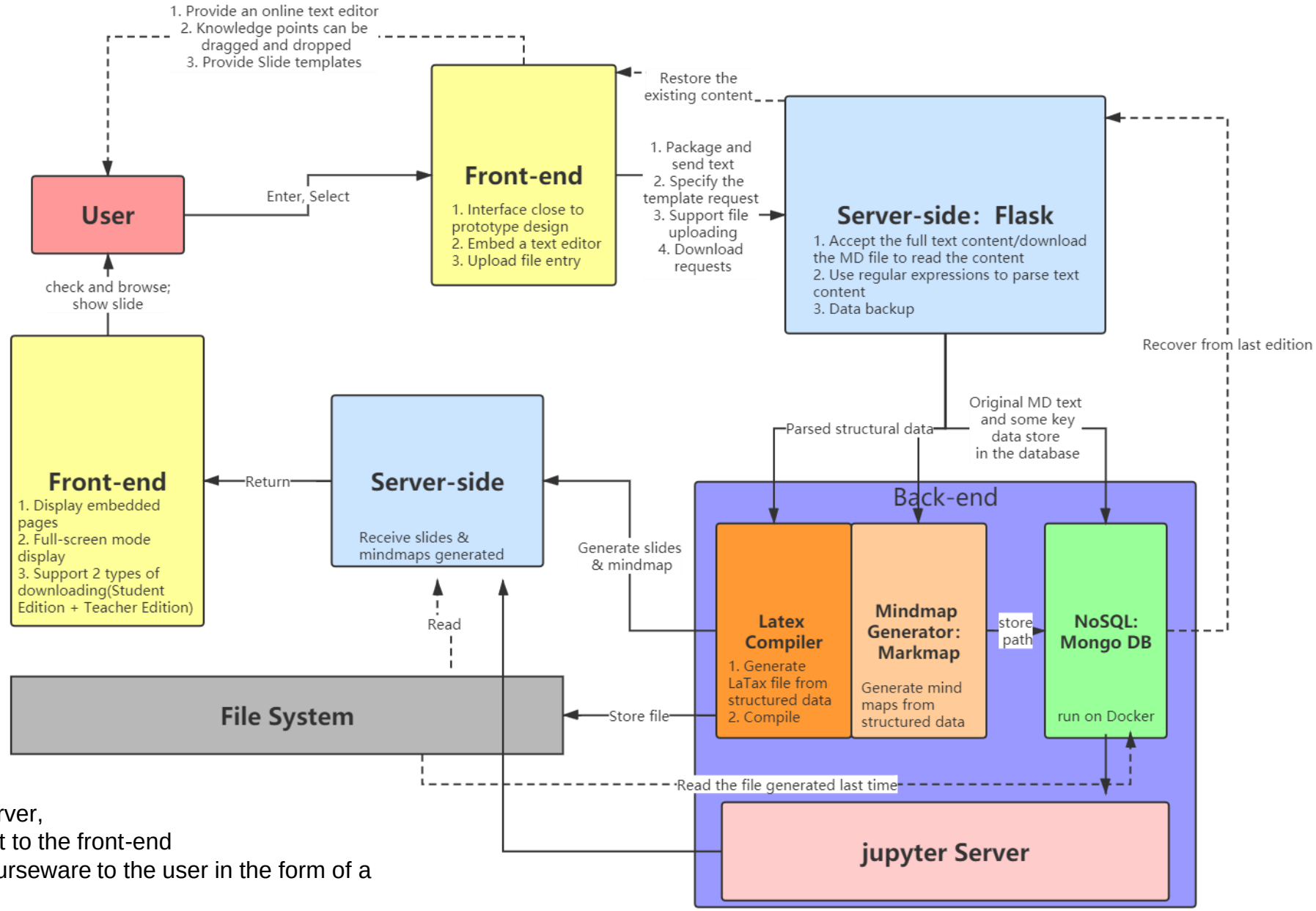
Frame and Material

Flask, Jupyter, MongoDB

Three parts of the technical architecture: front-end, server-side and back-end.

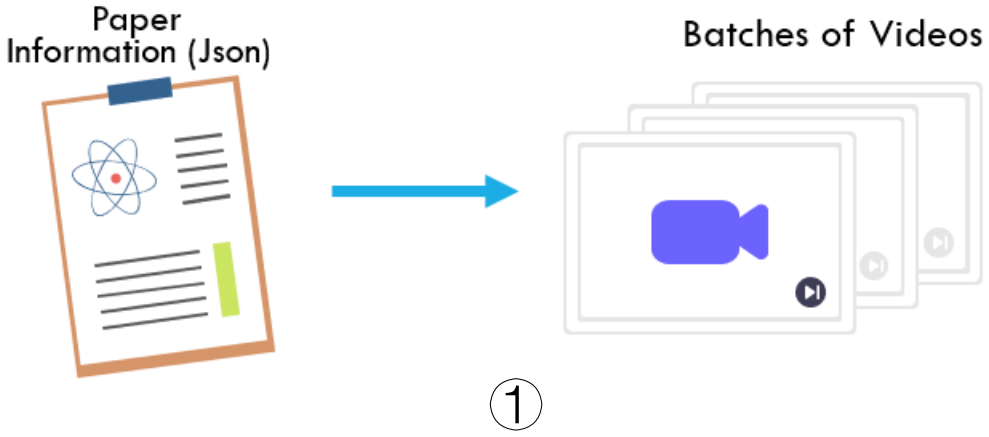
- In the Request link:
  - -The front-end part parses the user's request, provides a series of interactive functions and sends the user data package to the client.
  - - The client carries out regular parsing of user content, data reconstruction and data backup.
  - - The back-end runs the LaTeX compiler according to the template selected by the user, generates the courseware in pdf format, and stores the pdf and other file paths in the database run by the back-end.

- In the Return link:
  - - The backend returns the pdf path to the server,
  - - The server receives the pdf path and sent it to the front-end
  - - The front-end provides a preview of the courseware to the user in the form of a pdf embedded web page.

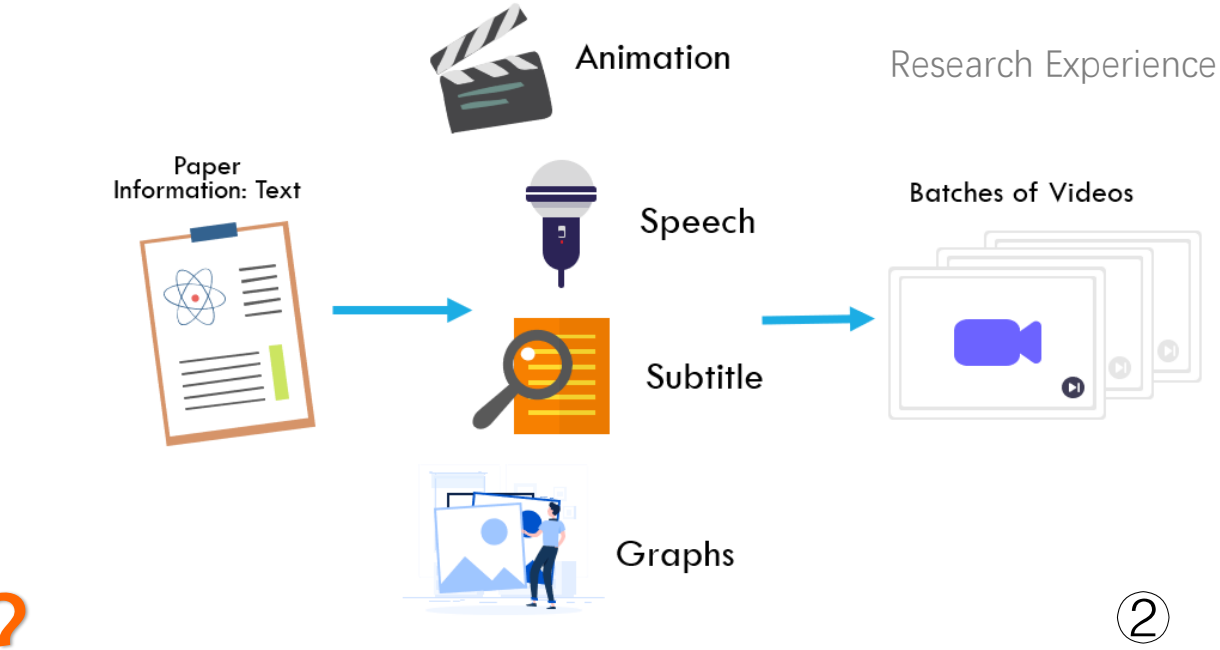


Calliope Video

Interpret papers into videos – to understand in seconds!



How?



Basic Information

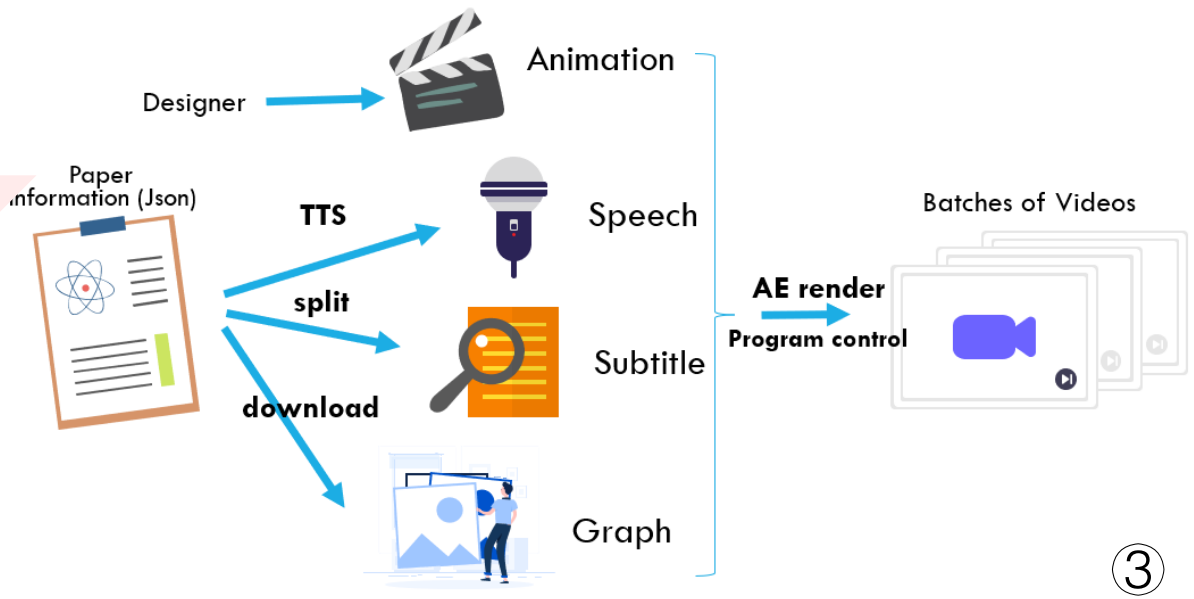
It is an AI-based software to assimilate a large volume of research papers' information in batch and automatically capture the gist into videos.

My role

Built a back-end for video synthesis from source data (texts & graphs), which were first generated into subtitles, narration, soundtrack, illustration, QR code, etc.

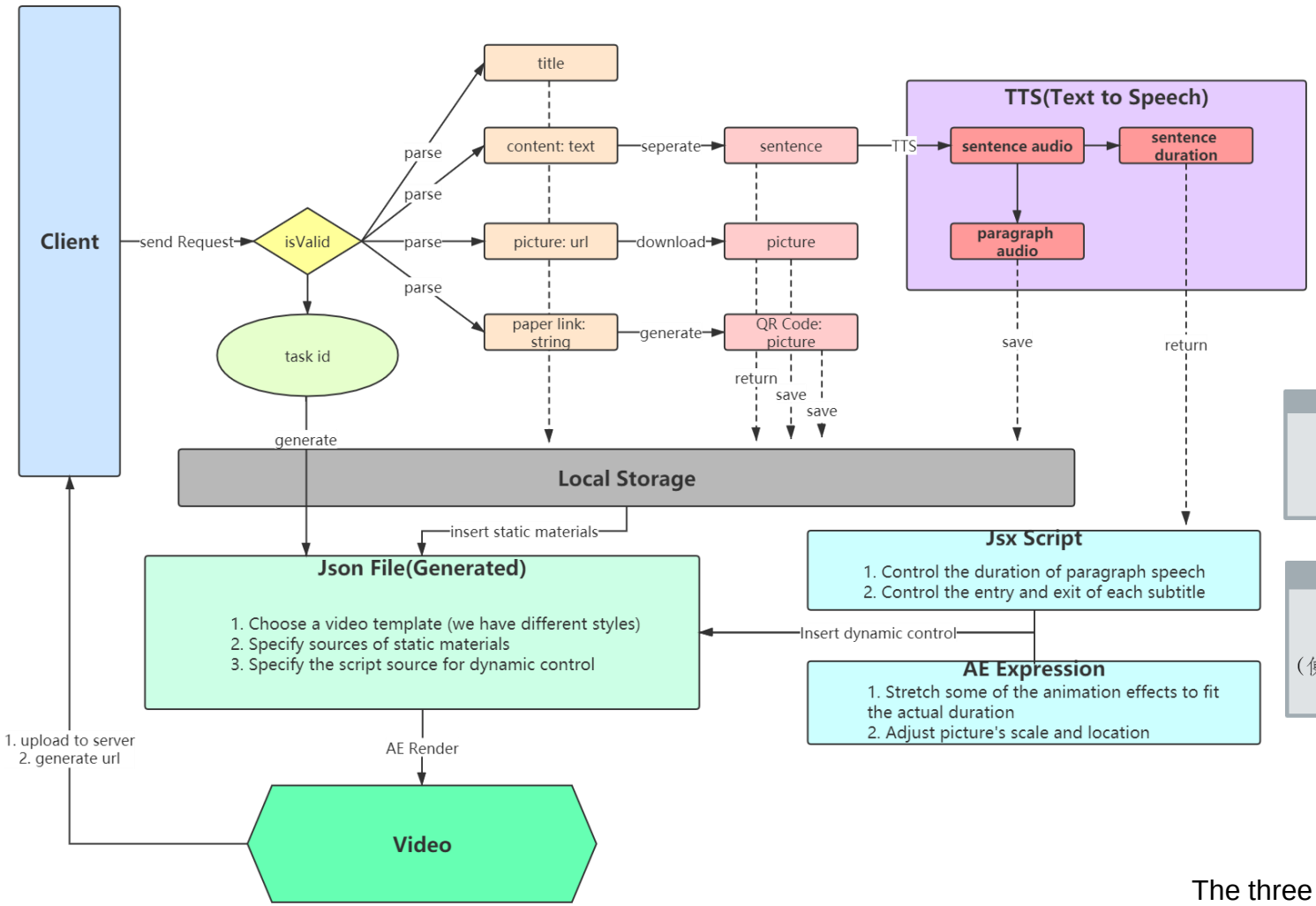
Timeline

06/2020 – 09/2020



Technology Architecture

Workflow



Language

Nodejs + jsx + AE expression

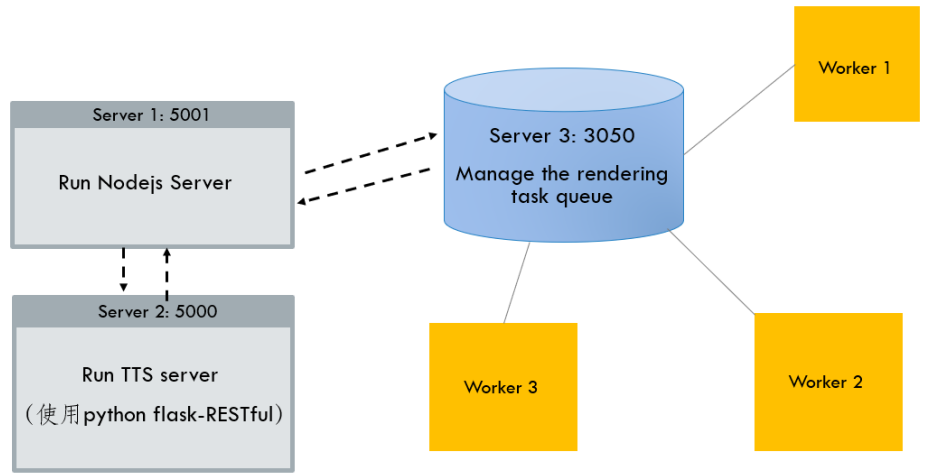
Environment

Windows 10 / MacOS Server

Materials

AE Render + npm + Postman

Deployment



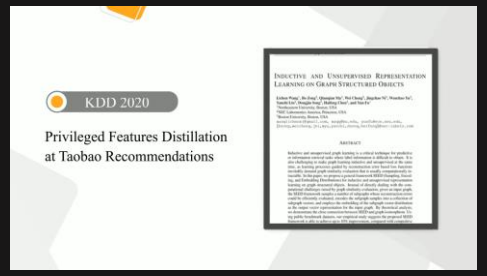
We use a distributed structure to render videos, which increases the parallel speed of rendering.

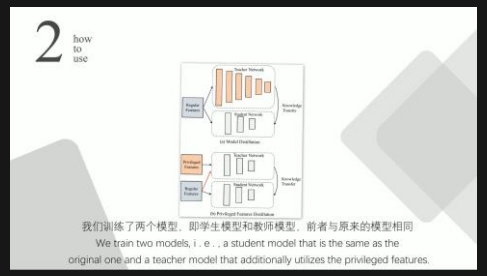
The three servers run on different ports, while workers can be started as processes. When the workers are distributed on different machines, they communicate to the server via http.

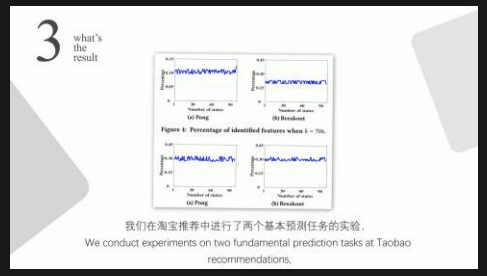
➢ The output videos can be seen on: https://www.aminer.cn/conf/kdd2020/videos

Some Screenshots of videos

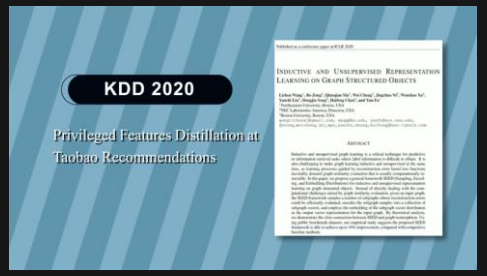
Template 1

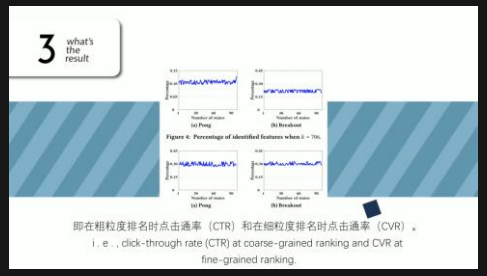




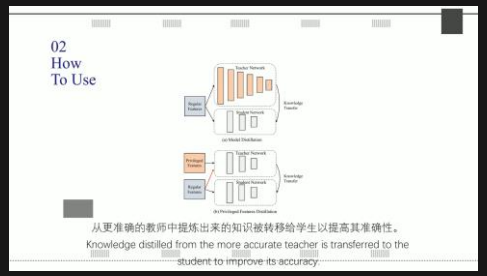


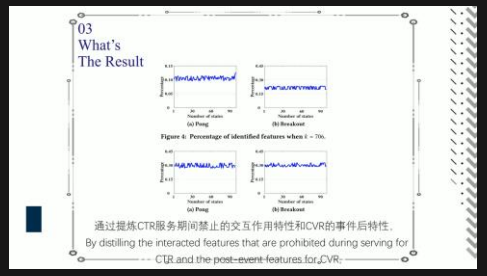
Template 2



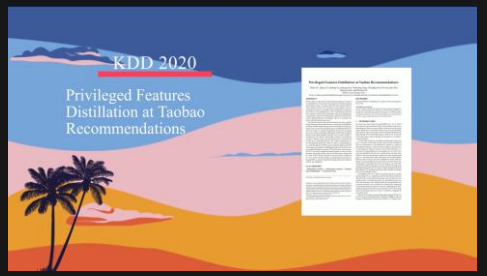


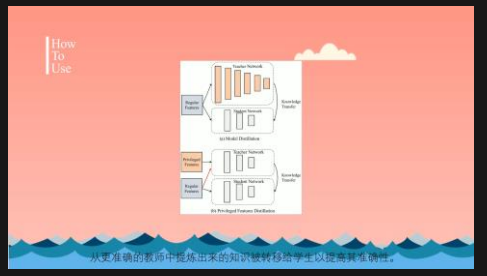
Template 3

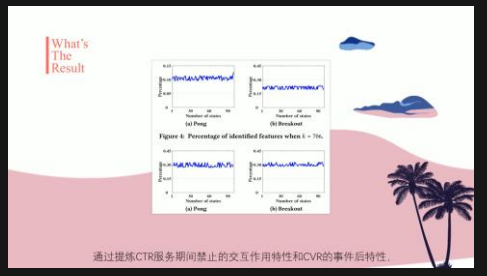




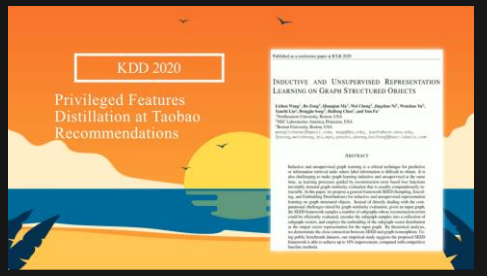
Template 4

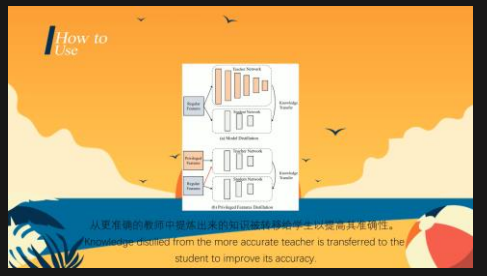


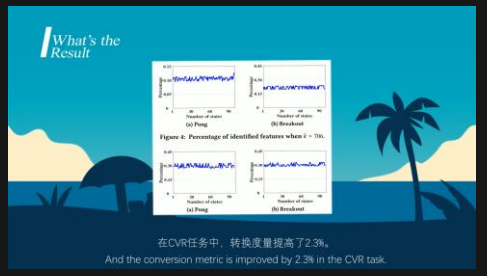




Template 5







Chinese subtitles, English alphabet, and bilingual subtitles are optional.