JOBS!

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By Group 6

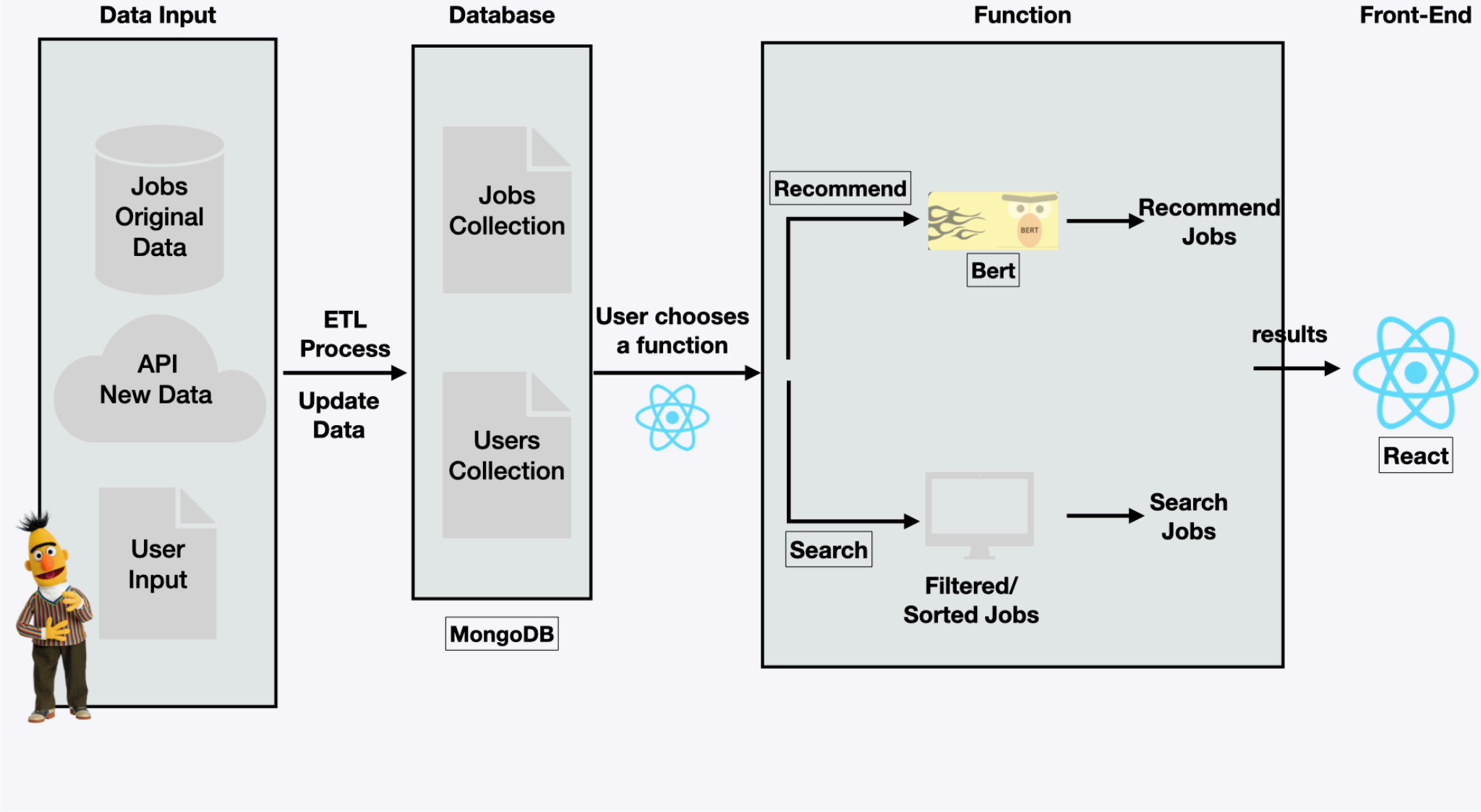
Github

What problem does our project solve?

Help you find your dream job!

- Search jobs based on your requirements (location, job title, work type, post date)
- Recommend jobs based on your background (skills, location)

How to solve?


Data Input
Database
Function
Front-End
Jobs Original Data
API New Data
User Input
ETL Process
Update Data
Jobs Collection
Users Collection
MongoDB
User chooses a function
Recommend
Bert
Recommend Jobs
Search
Filtered/ Sorted Jobs
Search Jobs
results
React

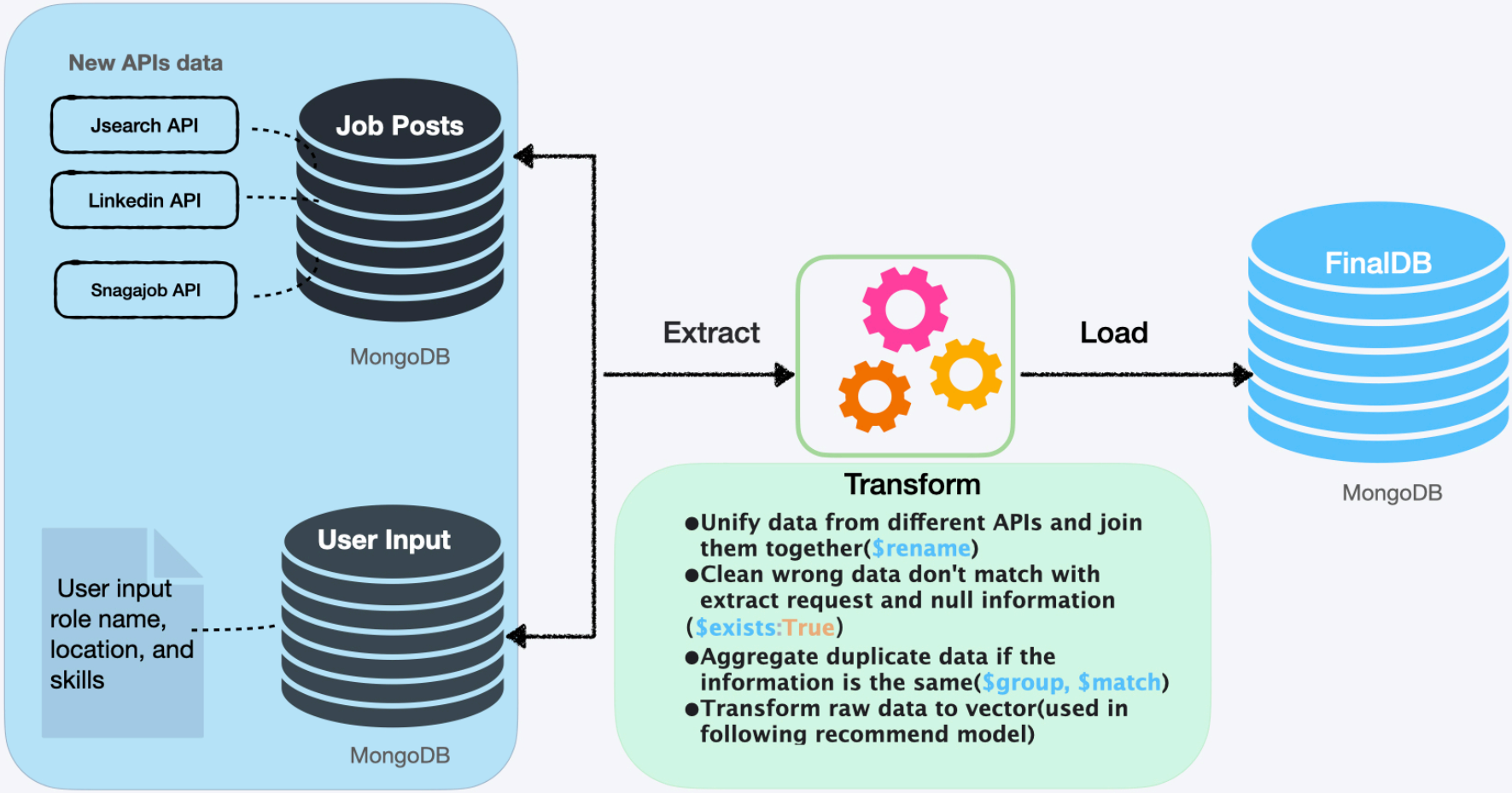
Data Source

- Data format: From APIs .json format
- Data quantity: 1000+
- How often we refresh: Daily, because everyday there are new job posts

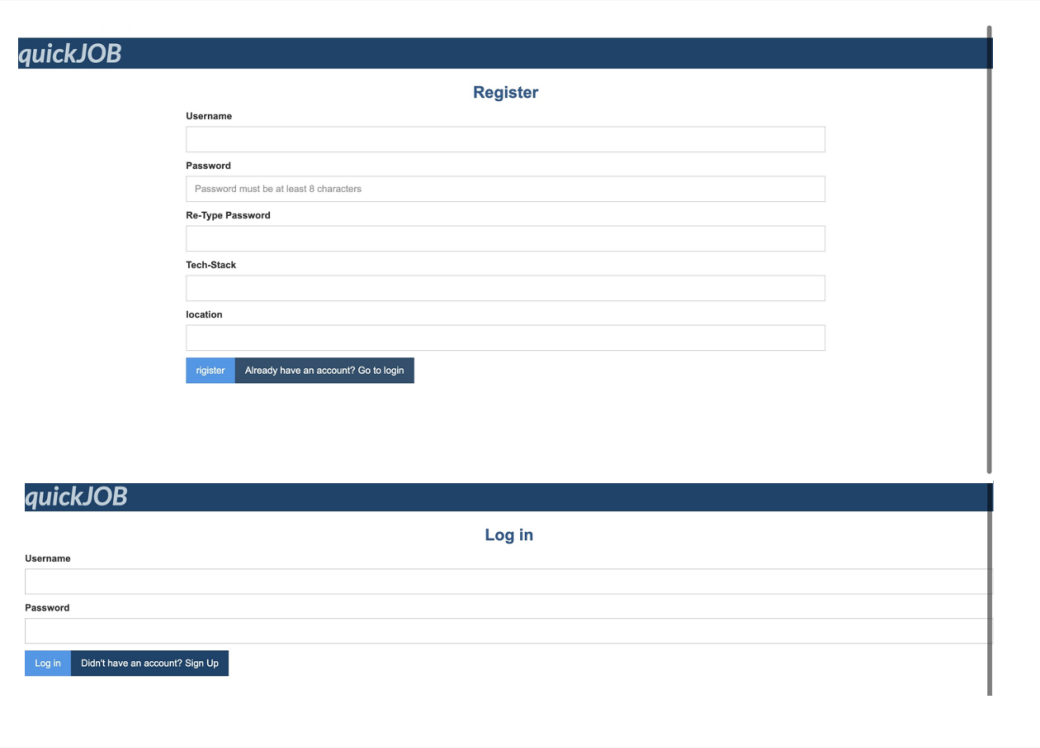
Technology

- Data storage: MongoDB
- Machine learning model: Bert
- Front end: Flask + React

Detailed ETL diagram



User Input Data



- Realize registration and login functions, store the user's info to user DB ,recommend their suitable jobs.
- Use the flask_login package to store and process the log in status of users.
- Click "like" button for interested jobs, and store "like" jobs.

Job Search Technical Details

Spelling Correction

- TextBlob is a Python library for Natural Language Processing.
- Use the **correct()** method to attempt spelling correction.

Location Detection

- Create location dictionaries.
- Logic: country -> state -> city

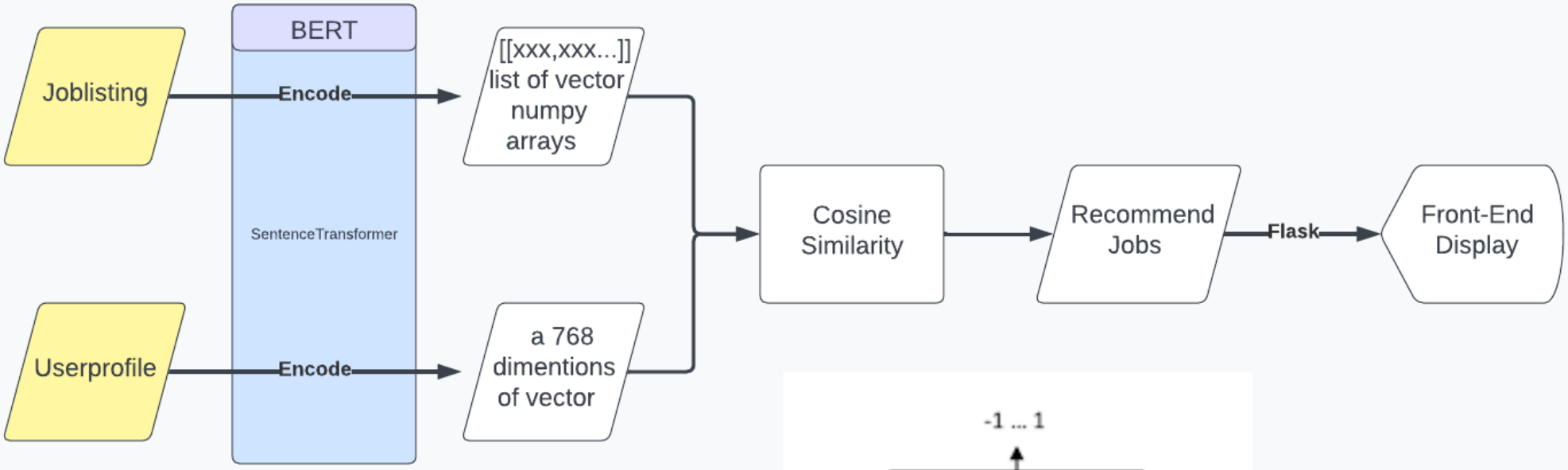
Regular Expression

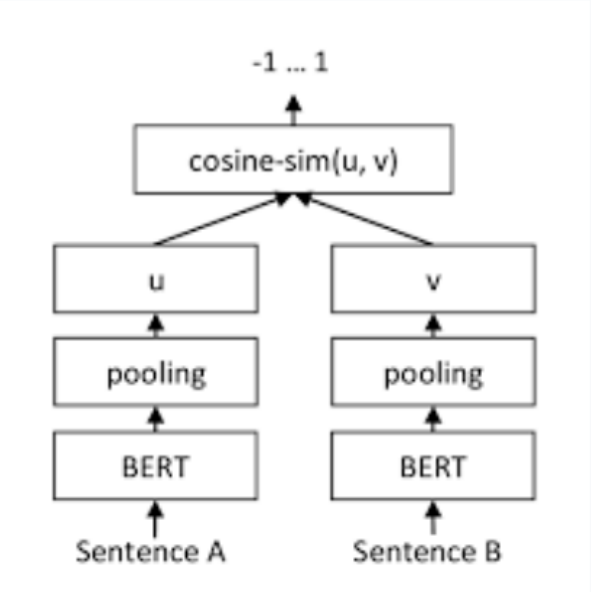
- $regex: Provides regular expression capabilities for pattern matching *strings* in queries.
- $options i : Case insensitivity to match upper and lower cases.

Sorting

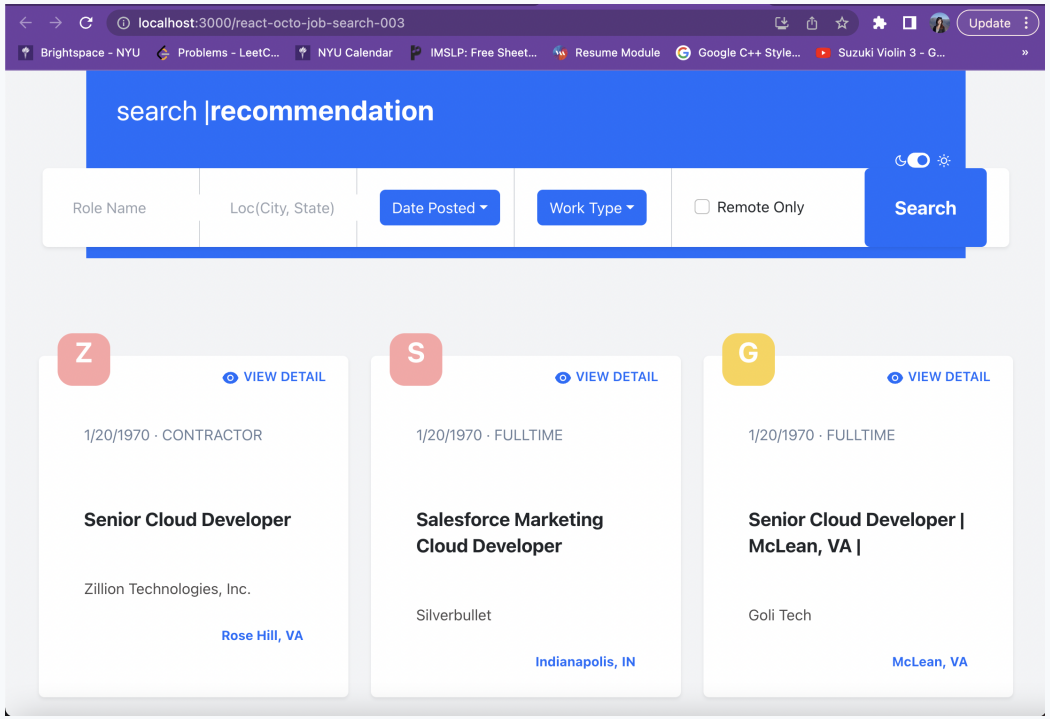
- Similarity(Query, Candidate) = (# of common words) / (# words in Candidate)
- Retrieval: Sort the candidates based on the similarity score.
- Example
  - Similarity(Software Engineer, Software Engineer) = 1
  - Similarity(Software Engineer, Senior Software Engineer) = 2/3

Job Recommend Technical Details





Front-End Implementation



- Flask Server open a port
- React collect user input as parameter
- React use GET Request to call back end function
- Render the jobs return from Flask API

Scale Our Project

- Store data on the cloud, and make a copy of data to enhance data security
- Rebuild the database with mongodump and mongorestore regularly
- Improve query performance, create indexes for fields that are commonly used to accelerate search queries, and help the application scale as the data grows.
- Add data analysis on the job market
- Add new job notifications and enable users to apply inside the website

Wish everyone could get a dream job!🎉