TECH ASSESSMENT FOR DATA SCIENCE LEAD

Presented by Light Low
2022-04-06

TABLE OF CONTENTS

01 TYPE OF RECOMMENDATION SYSTEM
02 MODEL PRESENTATION
03 CHALLENGES & LIMITATIONS
04 IMPROVEMENTS

TYPE OF RECOMMENDATION SYSTEM

Traditional Recommender System:

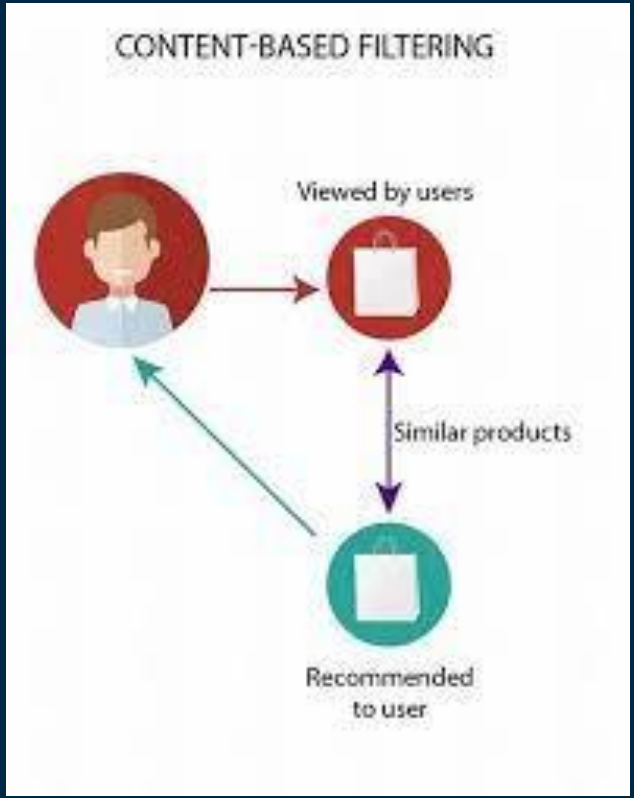
1. Content-Based
2. Collaborative Filtering
3. Hybrid Recommender System

Modern Recommender System:

1. Demographic-based approach
2. Knowledge-based approach

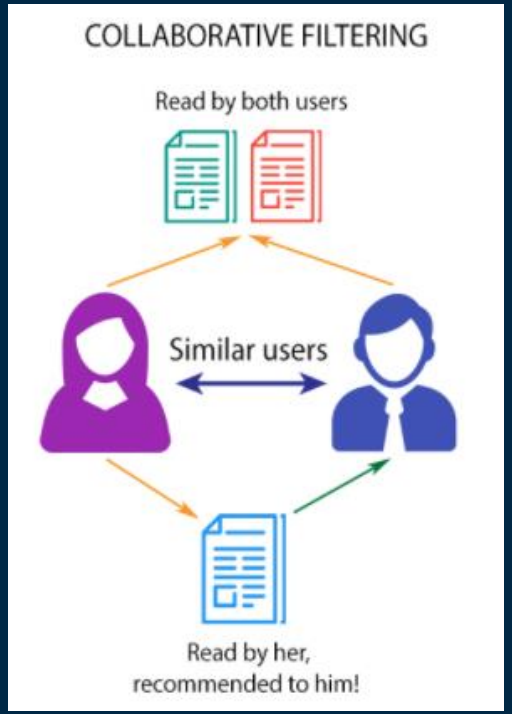
TYPE OF RECOMMENDATION SYSTEM

↳ CONTENT-BASED



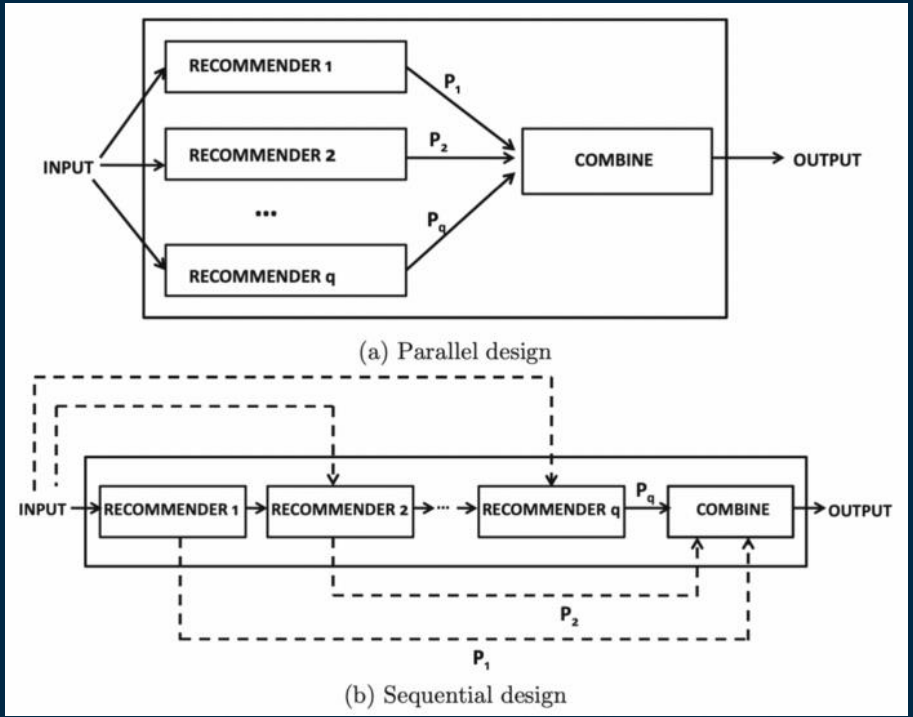
TYPE OF RECOMMENDATION SYSTEM

↳ COLLABORATIVE FILTERING



TYPE OF RECOMMENDATION SYSTEM

↳ Hybrid Recommender System



TYPE OF RECOMMENDATION SYSTEM

↳ DEMOGRAPHIC-BASED APPROACH

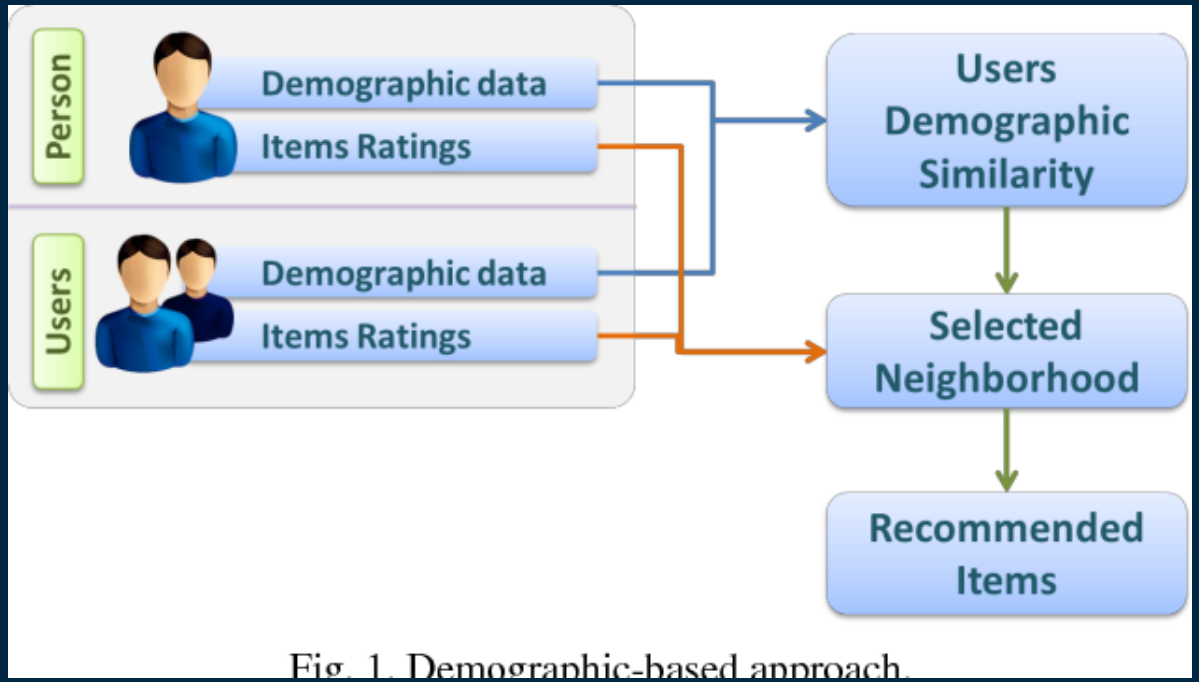
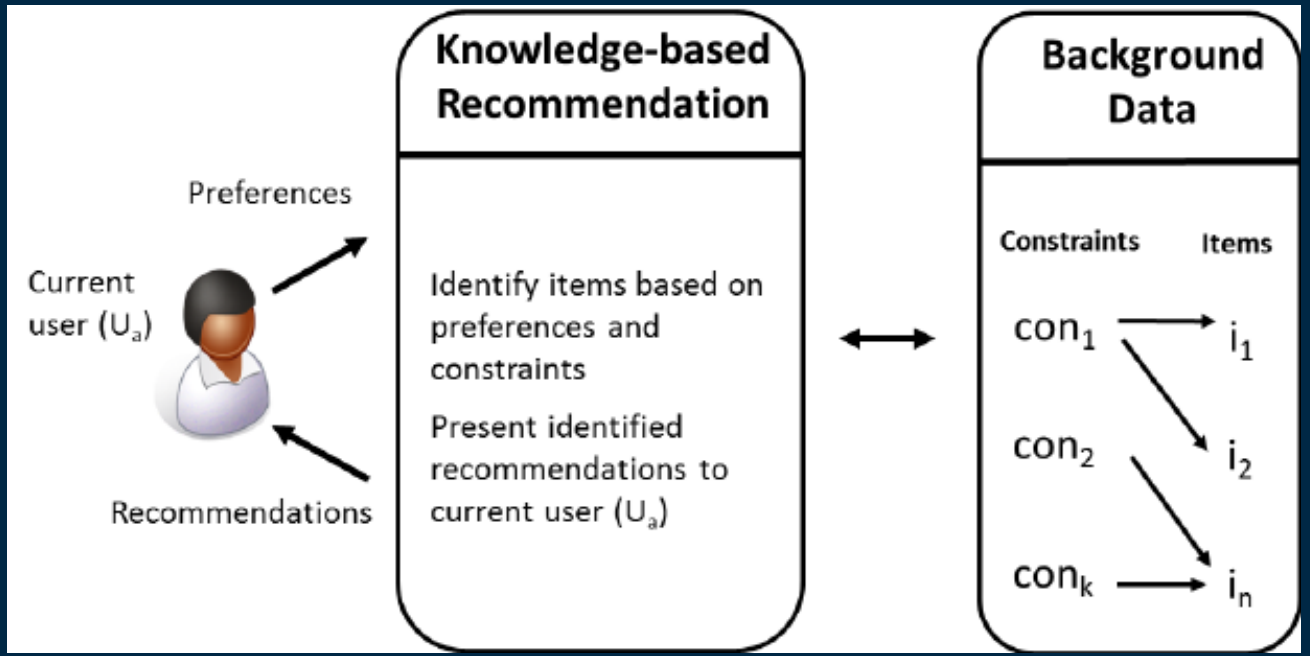


Fig. 1. Demographic-based approach.

TYPE OF RECOMMENDATION SYSTEM

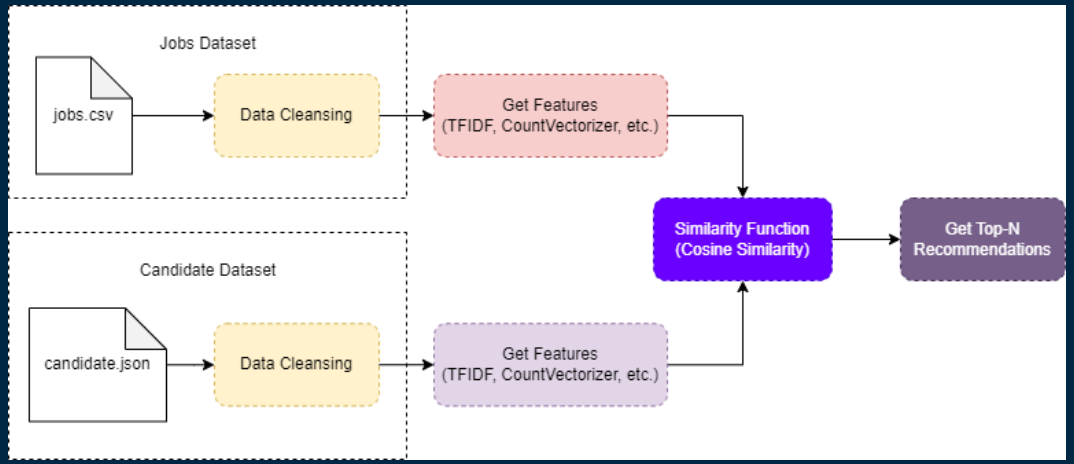
↳ KNOWLEDGE-BASED APPROACH



MODEL PRESENTATION

Development Process:

1. Data Cleansing, Preprocess, Manipulate (candidate & job)
2. Model Development:
    i. TFIDF
    ii. Count Vectorizer
    iii. Spacy
    iv. KNN



CHALLENGES & LIMITATION

1. Data Cleansing:
   To transform unstructured format in candidate data (Sections) into structured 2D vectors formatting.
2. Limitation by the volume of dataset
3. Limitation by the variation of dataset

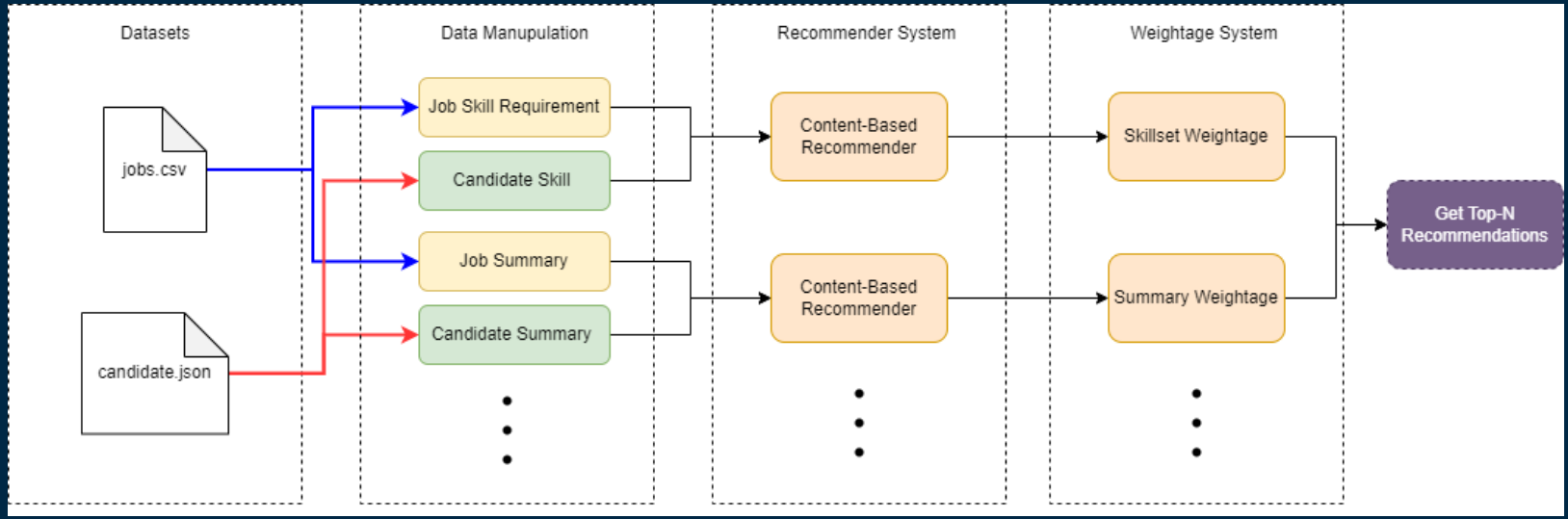
IMPROVEMENTS

1. Create related stop words under internal database to filter un-useful words.

```
    CandidateID                                                text
25           25  basic program bsc hons information technology ...
==================================================================================================
Text after clean:
 basic program bsc hons information technology fresh graduate passionate develop user friendly website mobile applic
ations excellent problem solving skills ability perform well team look fulltime position backend developers web deve
lopers mobile application developer internship bsc hons information technology fresh graduate passionate develop use
r friendly website mobile applications excellent problem solving skills ability perform well team look fulltime posi
tion backend developers web developers mobile application developer work experince internship backend development we
bby group sdn bhd achievements tasks design implement rule business logic use graphql query laravel php implement va
rious function mobile front end development use graphql api laravel php fix debug function errors mobile frontend de
velopment use graphql api laravel php fix web application design use html css javascript laravel php framework inter
n epic unicorn sdn bhd achievements tasks optimise seo performance website wordpress assist design webpage layout de
sign t shirt adobe photoshop edit compress web page picture test prototype apps set e commerce website promoter sete
l petronas achievements tasks engage customers discover want need set promotional stand promote apps provide need in
formation promote products service webdesigner assistant mart sdn bhd achievements tasks assist colleagues identify
customers web design need assist design webpage layout create land page website edit update picture facebook educati
on bsc hons information technology sunway university project create design basic e books rental software use scala c
ss create mobile app prototype figma diploma information technology sunway college project create design business we
bsite use html css basic javascript web development subject use android studio create simple mobile application to d
o list application create design functional food order system website final year project use html css php javascript
mysql skills knowlege graphql knowlege laravel php knowlege design pattern mvc knowledge mysql knowledge html css ph
p knowledge bootstrap knowlege wordpress cpanel phpmyadmin knowlege figma canva knowledge office tool basic program
language java javascript react js basicadobe photoshop skills basic video edit skills friendly customer interaction
creativity problem solve languages mandarin english organisation sunway taekwondo club logistics manager sunway taek
wondo club treasurer
```

IMPROVEMENTS

2. Segregate different user sections and features into separate content-based, combine it again by weightage set by business user (Hybrid Recommender with multiple content-based system).



IMPROVEMENTS

3. With enough data, can implement Hybrid Recommender System or Demographic-based approach.
    i. Adding implicit data example: user clicks, watched post, duration on screen, etc. We can implement Hybrid Recommender System by combining collaborative and content-based filtering system.
    ii. use Demographic-based approach to avoid cold start problem.

THANK YOU
FOR YOUR TIME AND PATIENCE