Food Advisor Chatbot

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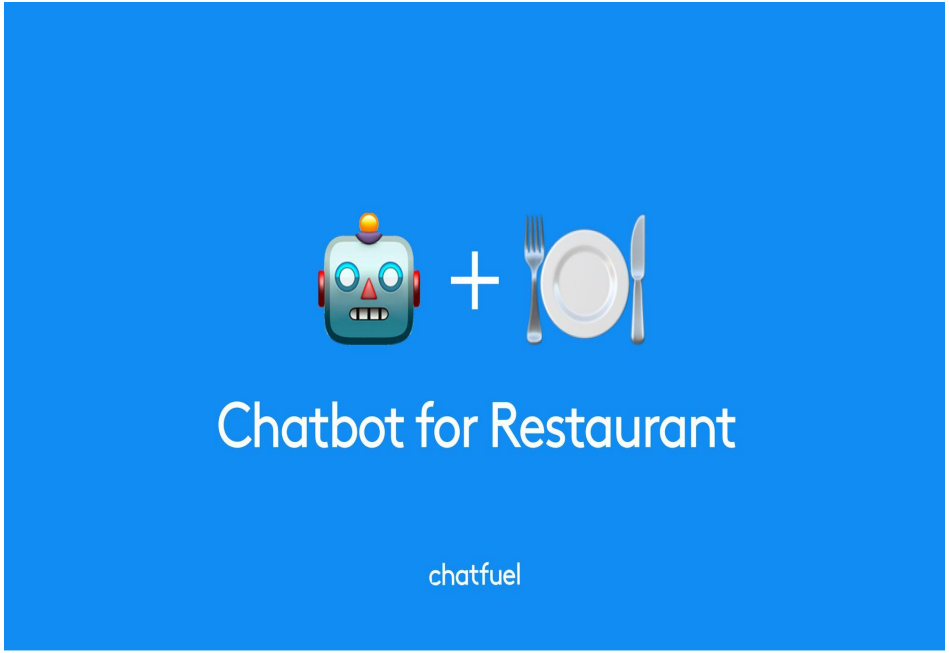
Why we choose the topic

- Intimately connect with **business scenario**: meet customer's needs;
- **High Efficiency**: Using chatbot instead of service employee
- **NLP development**: Can understand customer more clearly



Data Source and EDA

Conclusion:

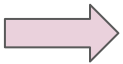
1. chatbot can deliver 3 parameters for recommendatic
   value, can only for partly fitting customers' requireme
2. recommendation mainly focus on rank, and can get
3. can return address, mail to chatbot, and some restra

```
]: df.to_csv('cleaned_tripadvisor.csv')

]: df['primary_cus'].value_counts()

]: Unknown             37972
   Japanese             7903
   French               6995
   Italian              5609
   Bar                  3110
                       ...
   Beijing cuisine         1
   Balti                   1
   Fruit parlours          1
   Southwestern            1
   Burmese                 1
   Name: primary_cus, Length: 120, dtype: int64
```

Data Source: Kaggle, link
https://www.kaggle.com/mikhailpustovalov/scraped-data-from-ta

EDA

1. Delete inactive, colsed and name_changed restaurants
2. Delete city with null value
3. rating, primary_cus, city fields are useful for recommendation
4. About 50% cus_rank is null, can't help to recommend
5. some restaurants have the same rank(mainly in 22500-25000)
6. ……



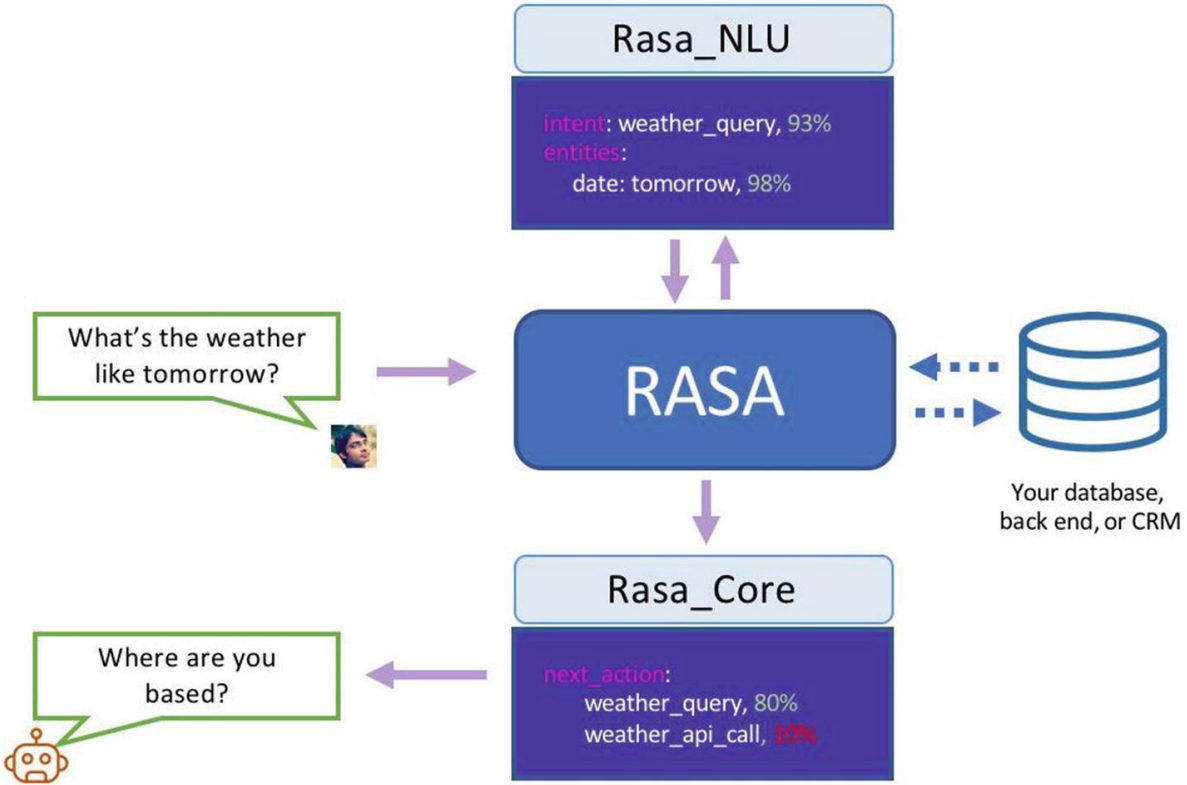
Got Data Characteristic

Cleaned Data

Main Functions of the Chatbot

- Search information about restaurants and recipes.
- Recommend restaurants and recipes according customer’s requirements and historical transactions.
- Book restaurants
- Rate or commend after consumption

The main development tools: RASA



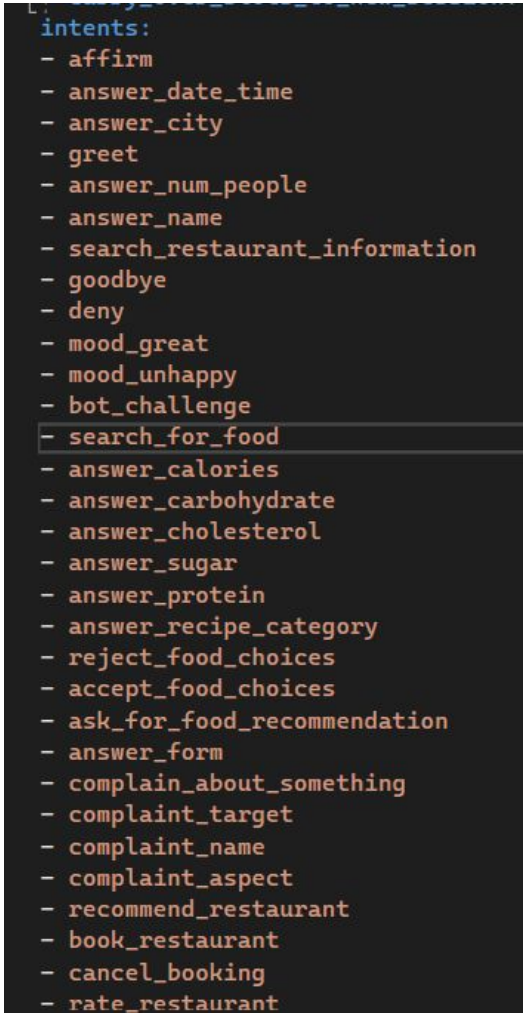
RASA NLU

Intents: 33

Entities: 24

Stories: increase as training continue

Rules: 12



RASA CORE and appended Database

Slots: 36

Customised Actions: 11

```
actions:
- action_book_restaurant
- action_cancel_booking
- action_get_history_record
- action_provide_other_food_choices
- action_rating
- action_recommend_food
- action_recommend_restaurant
- action_record_complaint
- action_search_restaurant
- action_select_food
- action_suggest_food
```

Database:

1. Transaction.csv
2. User_record.csv
3. user_complain_record.csv

The interaction between Customised Actions and Database

Customised Actions

1. Slots value get and assign
2. Direct Response
3. Condition Judgement
4. Recommendation according Domain Knowledge
    a. Distance Recommendation
    b. Random Recommendation
    c. Conditional Recommendation
    d. ……

Actions and Database

1. Search Information
2. Store Information

OUR FUTURE PLAN

1. More close to business scenario and logic
2. More Training to improve accuracy
3. Deploying with multiple communication tools