

SMARTPHONE-BASED FOOD ASSESSMENT USING SEMANTIC ONTOLOGY AND DEEP LEARNING





Smartphone-Based Food Assessment Using Semantic Ontology and Deep Learning

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MOTIVATION

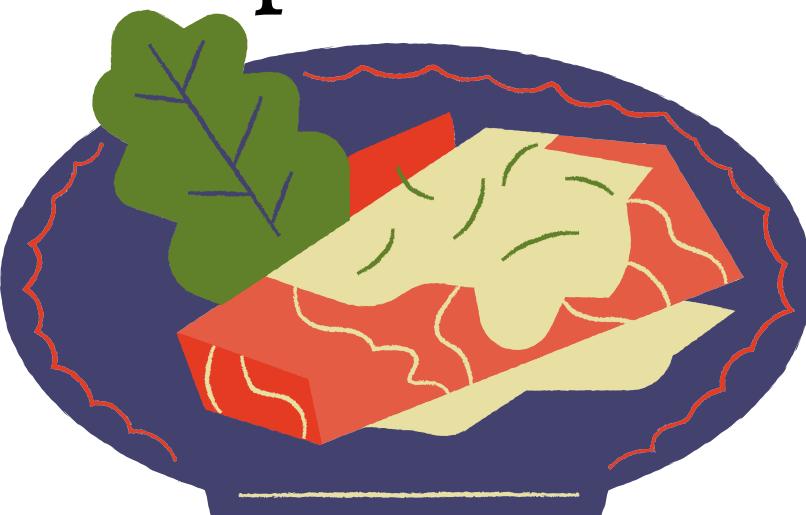
Consumers with personal diet preferences or dietary restrictions such as lactose intolerance and vegetarianism faces difficulties when purchasing food products as factory-made goods are sometimes not transparent in informing the consumers whether the products are suitable for their dietary preferences or not.





PROBLEM STATEMENT

- 1) For people with dietary preferences, buying commercial products can be difficult as it is hard to know whether the products are suitable to be consumed or not.
- 2) It is hard to find application that can help consumers to detect whether or not a product complies with multiple dietary preferences. Existing applications nowadays usually focus only on certain dietary preferences.





SOLUTION

Food4U app can help solve the problems faced by the consumers.
Users can do the following:

1. Take pictures or use pre-existing picture of ingredients.
2. Can edit list of ingredients.
3. Can choose dietary preferences among:

Vegan

Lactose Intolerant

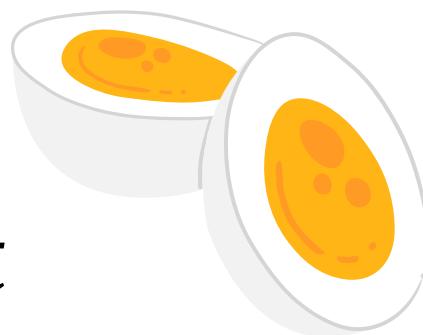
Egg Intolerant

Pollotarian

Pescatarian

Lacto-ovo Vegetarian

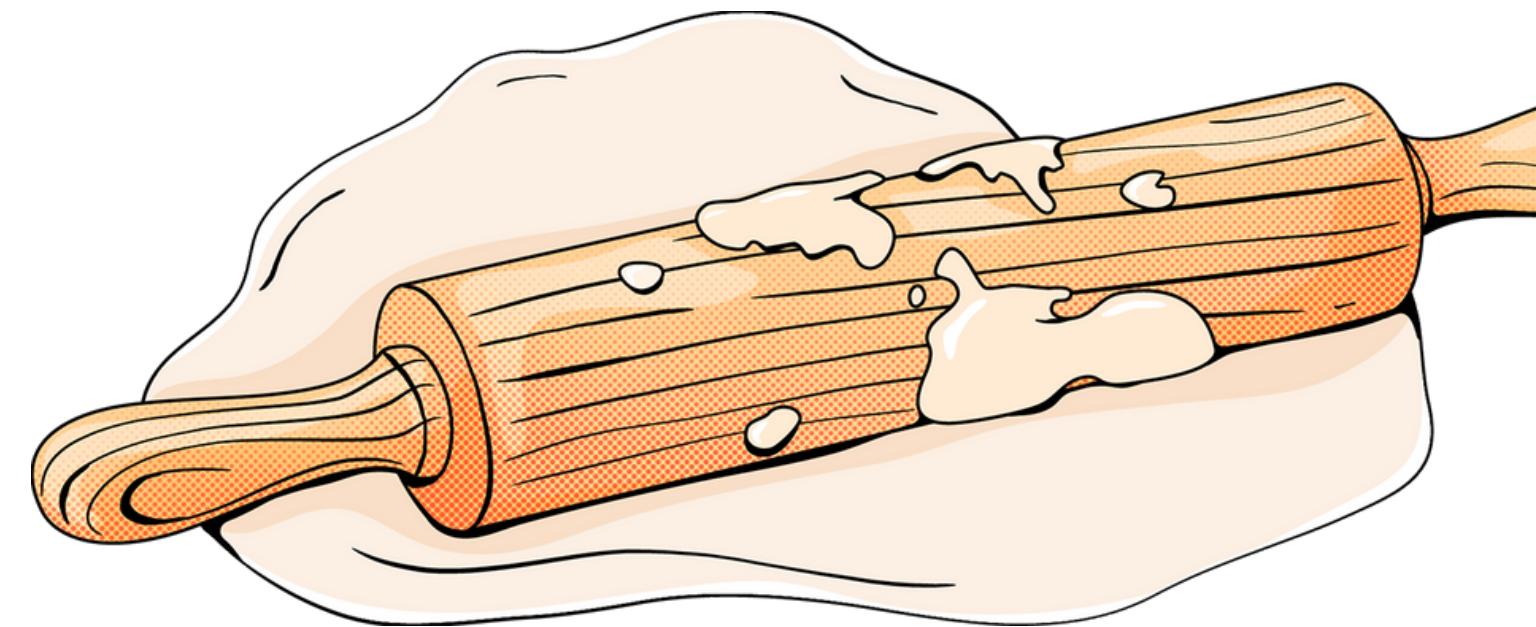
No Preference



4. Check list of ingredients suitable for their dietary preference or not

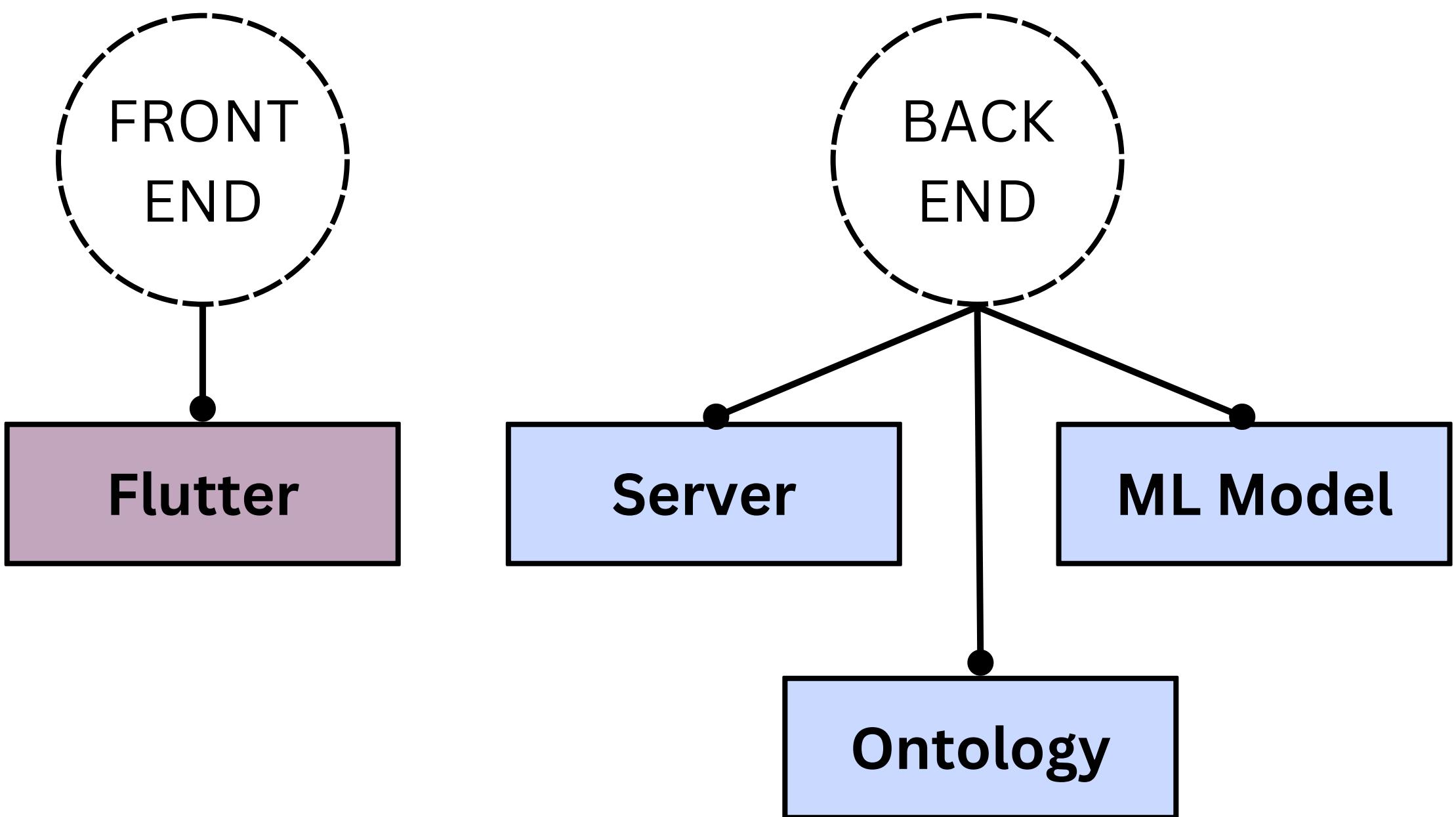
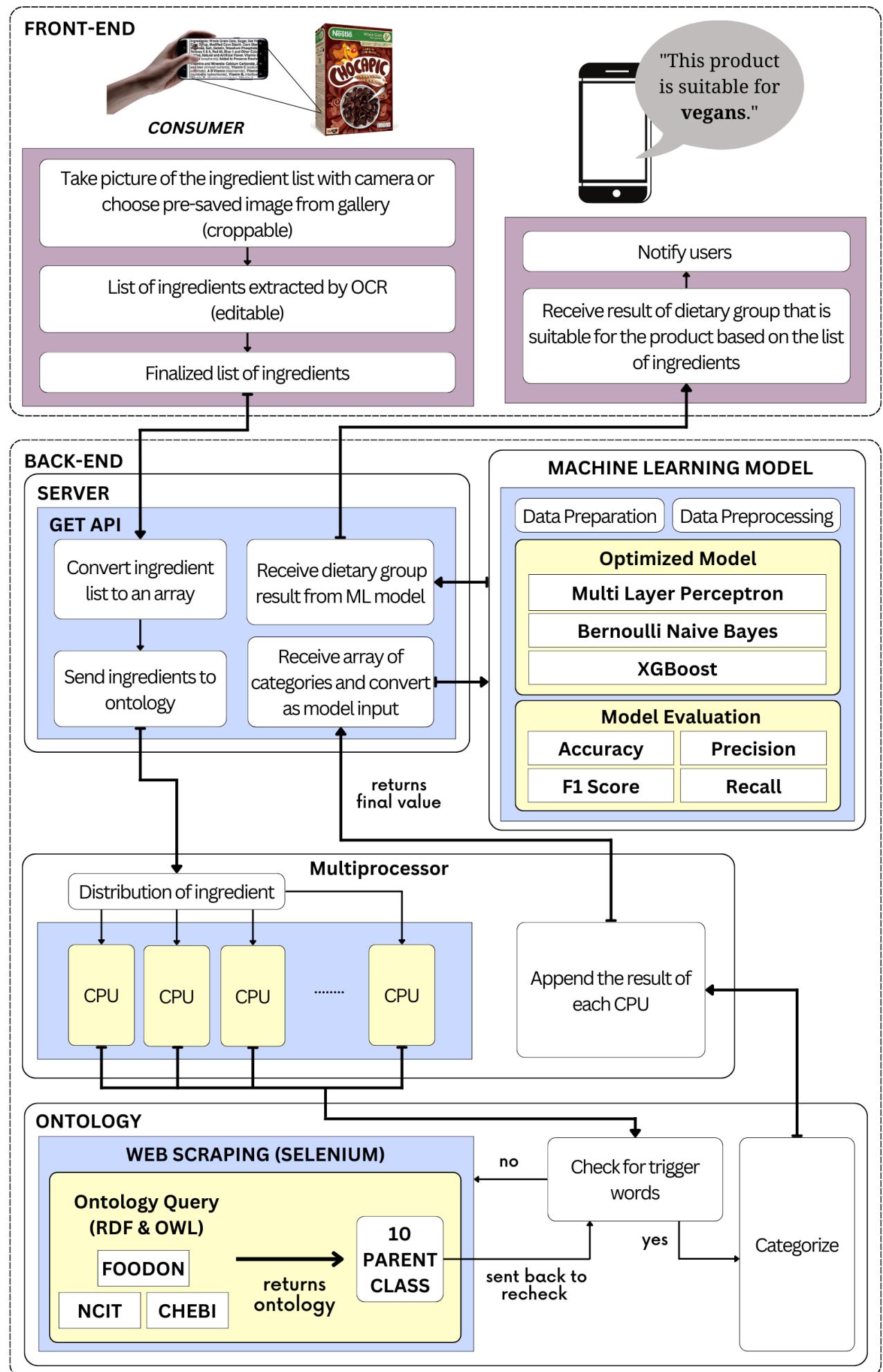


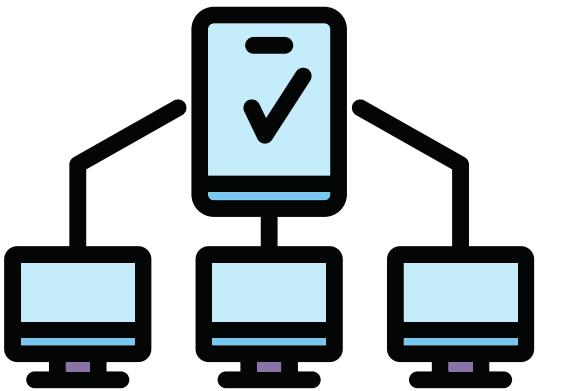
EXTRA FEATURES

- 1) Users can register and login into the app (or as guest)
 - 2) User can save their profile picture and dietary preference
 - 3) A demo gif for users on how to check ingredients
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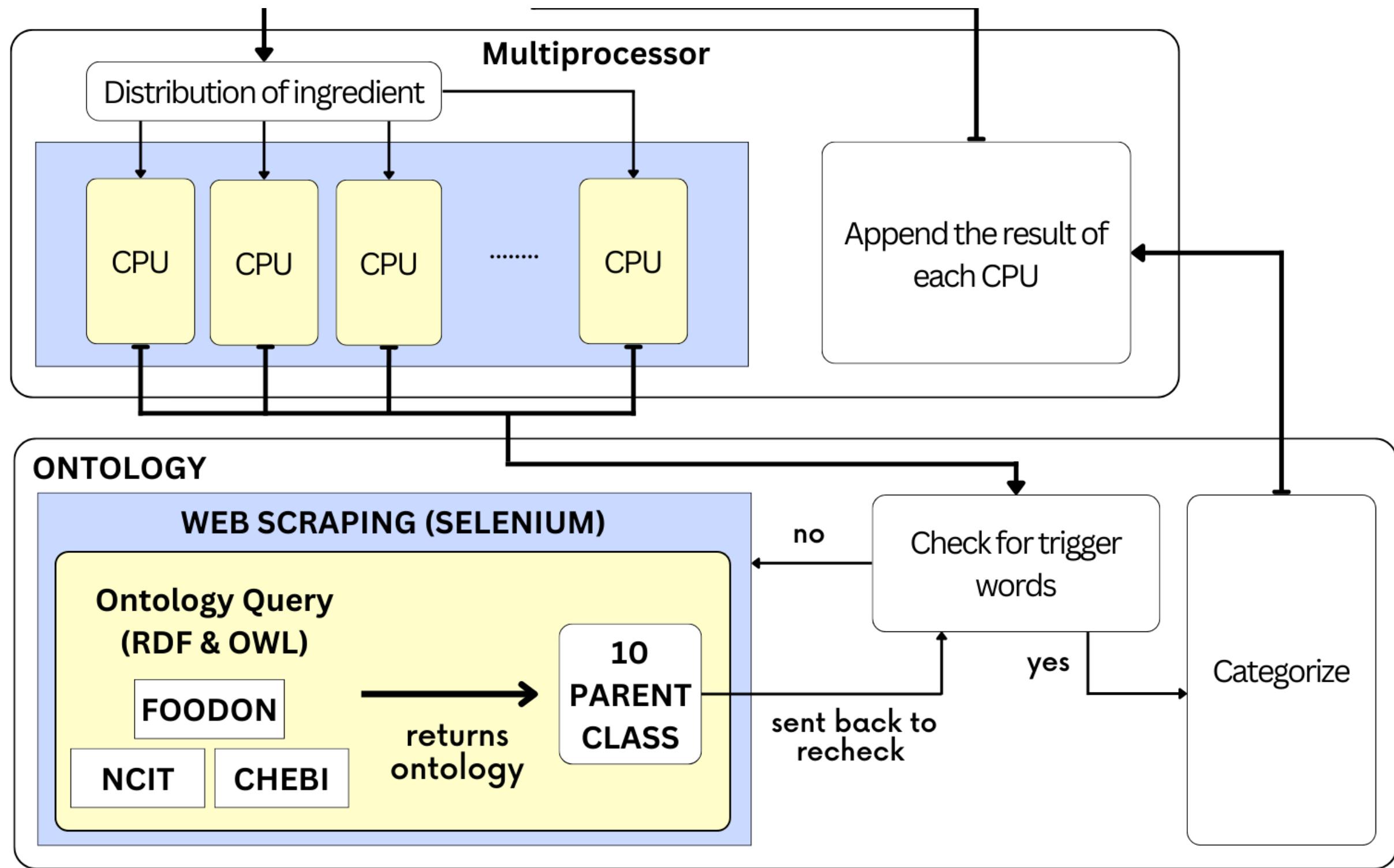
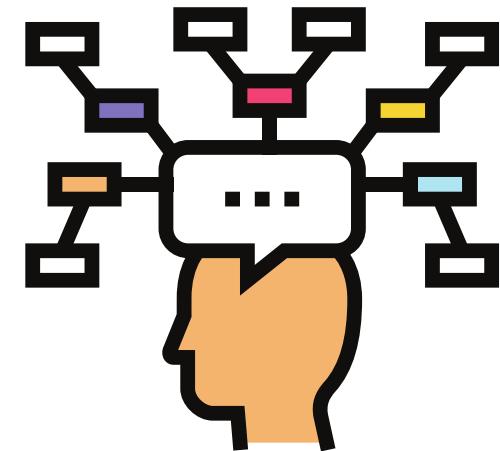
FRAMEWORK

Consists of :-





ONTOLOGY

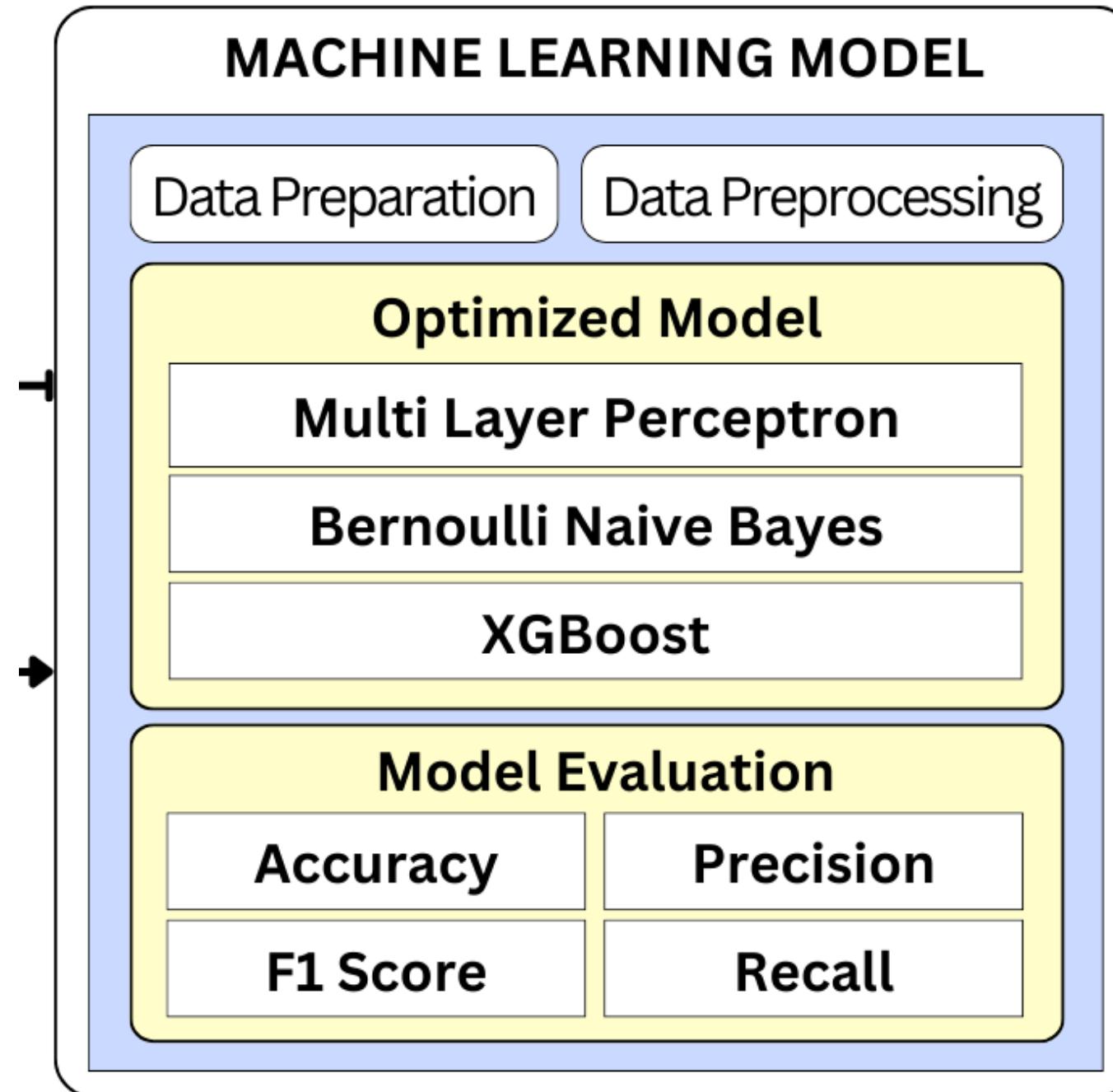


Main Component

- Multiprocessing
- Ontology
- Web Scraping

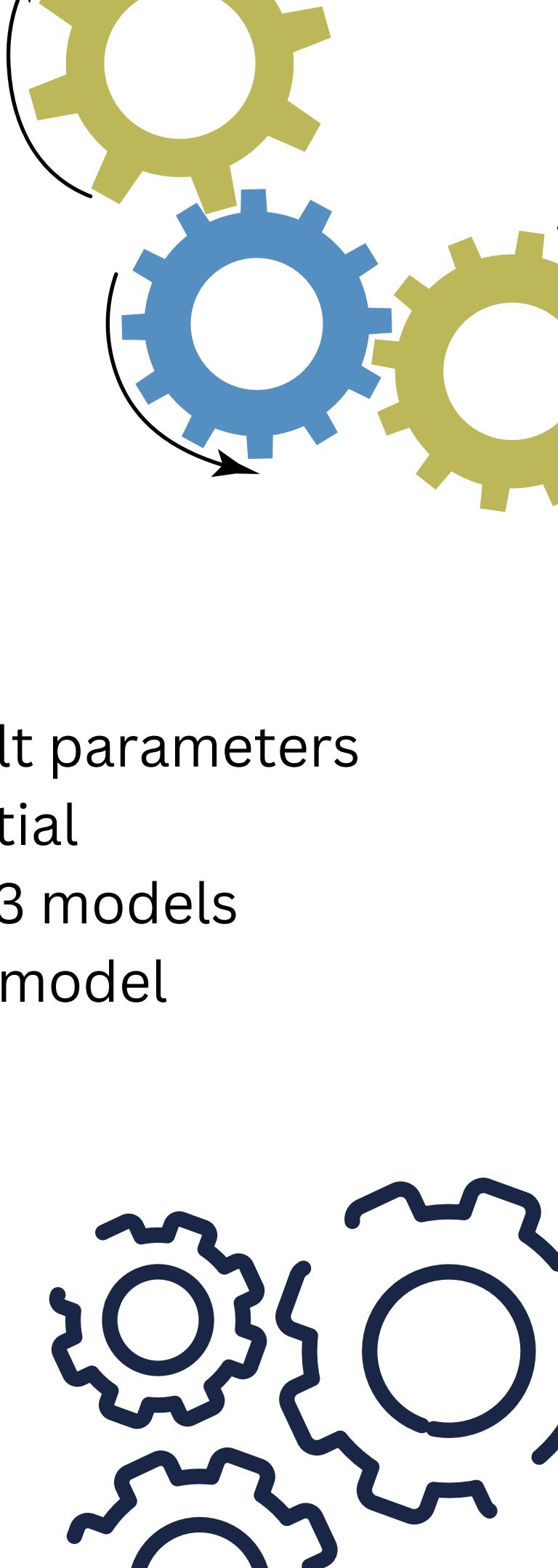


MACHINE LEARNING



Model Selection Process:

1. Data Prep. and Preprocess
2. Train 30 models with default parameters
3. Select 3 models with potential
4. **Optimize** and **Evaluate** the 3 models
5. Select the best performing model





Thank
you!

