Final Project: Proposal

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Project Title: **Omni Bot**

1. List 3 questions that you intend to answer (1 point)

- Is it possible to design a well-rounded chatbot which can handle more generic use-cases? i.e. an **image input** instead of text
- Can we create a plug and play system where we add models to extend the functionality of the chatbot?
- Can we integrate ChatGPT with our model so as to give better results and create a one-stop solution as a robust **replacement for search engines**?

2. List all the datasets you intend to use (1 point)

- We will create our own dataset for the model that identifies the input problem statement.
- Sudoku
- Live image capturing (object identification)
- OCR
- Image Captioning

Note: If feasible, we will integrate other tools/datasets as well.

3. Give us a rough idea on how you plan to use the datasets to answer these questions. (2 points)

● Data Collection: We will create a dataset for the main problem identification. For the rest, we have identified datasets available online and linked them above

● Data Exploration: Although the idea is to leverage existing data and models, we would still like to customize these implementations to best fit our expectations. Hence, we would need to perform EDA for our datasets

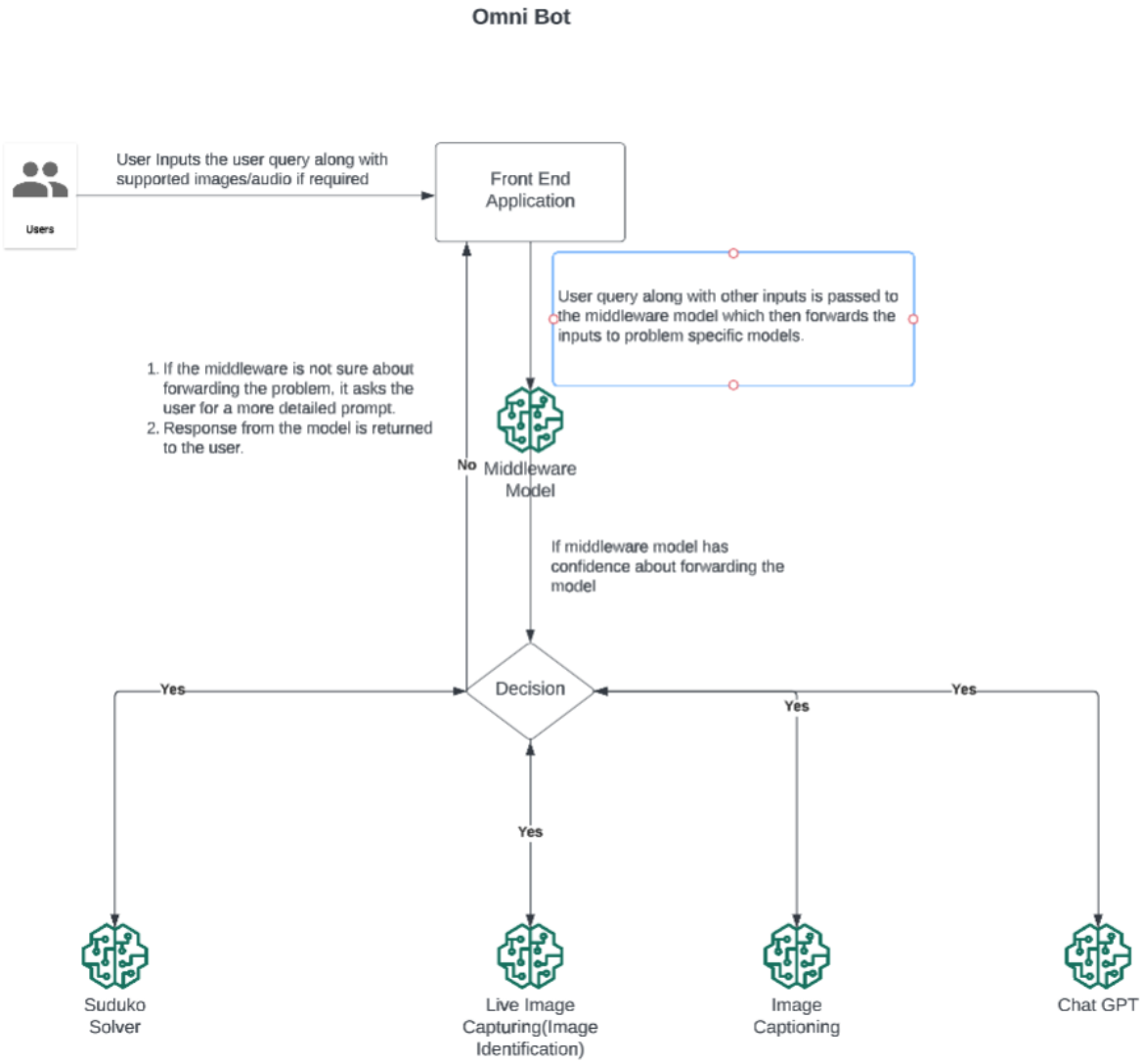
● Data Cleaning: We are using existing clean datasets so chances are slim that we will need data cleaning for the most part

● Data Integration: Yes, we need to integrate all data and models into one umbrella AI system

● Data Analysis: Each model will have its own analysis and metrics, and the middleware AI will have a simple metric based on false positives and negatives and how often it can detect the problem correctly

● Data Product: A chatbot that has the ability to answer all input problems that fit into any of the custom models. The plug and play architecture would allow you to iteratively enhance the system by adding more secondary models with their own preprocessing and category in the middleware

Model Architecture



4. Think about that once your project is complete, what impacts it can make. Pick up the greatest one and write it down. (1 point)

- We aim to create an **integrated AI system**, which can be used to solve multiple problems including different inputs such as text, images, audio, etc. Users will no longer have to browse multiple applications and model implementations for different use cases.
- We want to create a plug-and-play application, where any user can add their custom functionality by simply training their model and adding it to our system.