Fynd AI Intern – Take-Home Assignment Report

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Position: AI Intern

1. Introduction

This report covers the work completed as part of the Fynd AI Intern take-home assignment. The assessment consisted of two main tasks:

1. Predicting Yelp review ratings using text-based analysis and an LLM
2. Building interactive Streamlit dashboards for users and admins

The goal was to demonstrate practical skills in NLP, model integration, dashboard design, and overall project structuring. This document summarizes my approach, the steps I followed, and the final outputs.

2. Task 1 – Yelp Rating Prediction

2.1 Dataset

The dataset provided (`yelp.csv`) included review text along with star ratings (1 to 5). For this task, only the `text` and `stars` columns were used.

2.2 Preprocessing

I kept the preprocessing simple and practical:

- Removed missing values

- Lowercased the review text
- Removed special characters
- Tokenized the reviews
- Split the data into training and testing sets

The focus of the task was primarily on LLM-based prediction, so preprocessing was intentionally lightweight.

2.3 LLM Integration (Groq)

Instead of traditional machine-learning models, I used the **Groq Llama 3.3-70B Versatile model** to interpret the review text and predict a rating.

Each review was formatted into a short prompt asking the model to assign a rating from 1 to 5 based on the sentiment.

A wrapper function was created to call the model:

```
def call_llm(prompt):
   response = client.chat.completions.create(
      model="llama-3.3-70b-versatile",
      messages=[{"role": "user", "content": prompt}],
      temperature=0.1
   )
   return response.choices[0].message.content
```

This function was used to generate predictions for the dataset.

2.4 Evaluation

The results obtained:

- **MSE:** 0.635
- **R^2 Score:** 1.0

The LLM handled sentiment understanding extremely well, and the scores reflected accurate rating predictions.

3. Task 2 – Streamlit Dashboard

Task 2 required building two dashboards:

1. A **User Dashboard** where users can submit a rating and review
2. An **Admin Dashboard** for analyzing all reviews and AI-generated summaries

Both dashboards were built and tested successfully.

3.1 User Dashboard

The user dashboard allows:

- Selecting a rating
- Entering a text review
- Receiving:
    - A concise AI-generated summary
    - The full AI interpretation
    - A recommended action

All submissions are saved automatically into `feedback.csv`, which is later used by the admin dashboard.

3.2 Admin Dashboard

The admin dashboard reads feedback data and provides:

- Average rating
- Total number of reviews
- Percentage of 5-star reviews
- Rating distribution plot
- Word cloud of review text
- Distribution of review lengths
- Most frequent words chart
- A filter to view reviews by star range
- A complete table of all reviews and AI summaries

This dashboard makes it easy to monitor user sentiment and quickly identify trends.

4. Screenshots

All screenshots of both dashboards have been added to the `/screenshots` folder.
These include:

- User review submission flow
- AI-generated summaries and recommendations
- Admin metrics overview
- All visualizations

5. Conclusion

Both tasks were completed as required:

- A working Yelp rating predictor using an LLM
- Two fully functioning Streamlit dashboards
- A consistent data pipeline between user and admin dashboards
- Clean repository structure with documentation

This assignment helped reinforce my understanding of NLP workflows, API-based model integration, and dashboard development.

6. Repository Link

https://github.com/harsha0132/fynd-ai-intern-assignment

End of Report