

# E-Commerce Automated Resolution System

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# CHALLENGES

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## Current challenges in e-com customer support

- Up to 80% of all support tickets are for simple, repetitive questions ([Source](#)).
- Without an intelligent "receptionist" to triage these requests, human agents waste the majority of their time on simple tasks.
- 60% of customers report that waiting for a response is the most frustrating part of a service interaction ([Source](#)).

Using a simple chatbot:

- They can handle simple keywords but fail at any real conversational complexity, creating a "dead end" for the user.

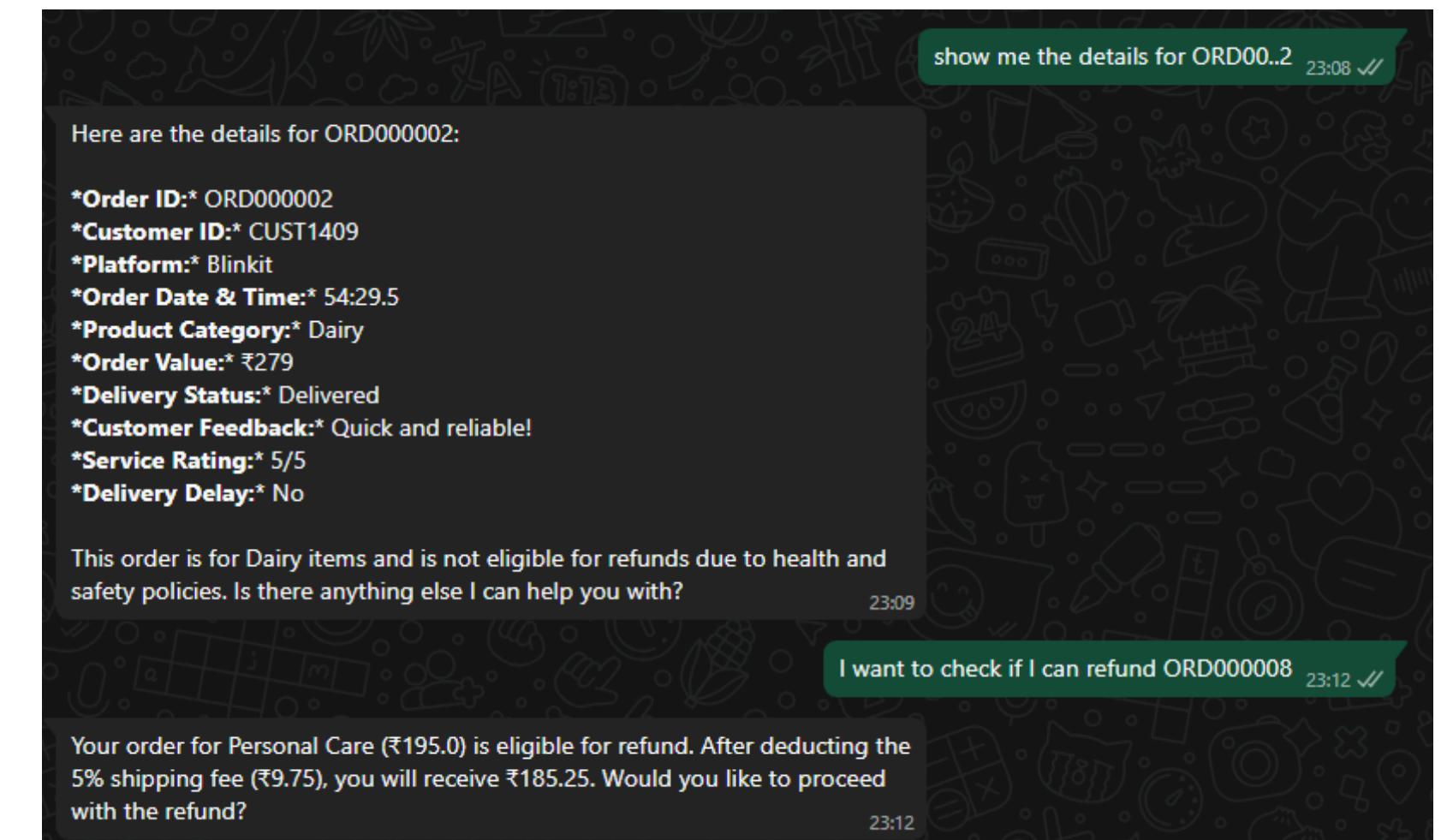
**What if we use GenAI + tools to handle daily customer support task?**

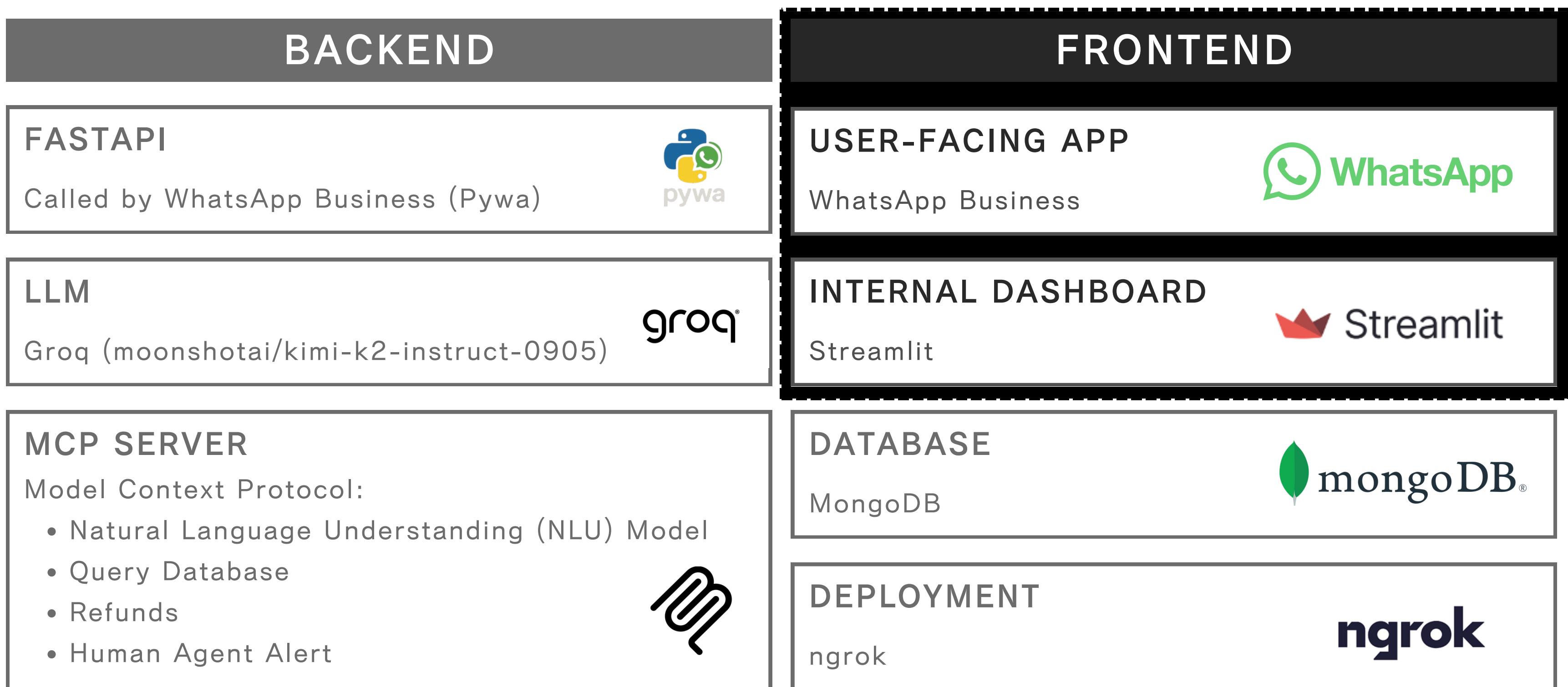
# PROJECT

The project implements an end-to-end AI-powered customer service agent that handles e-commerce queries through WhatsApp. The system intelligently triages customer messages, queries order databases, processes refunds, and maintains conversational context - all while providing a natural, human-like interaction experience.

## Key features:

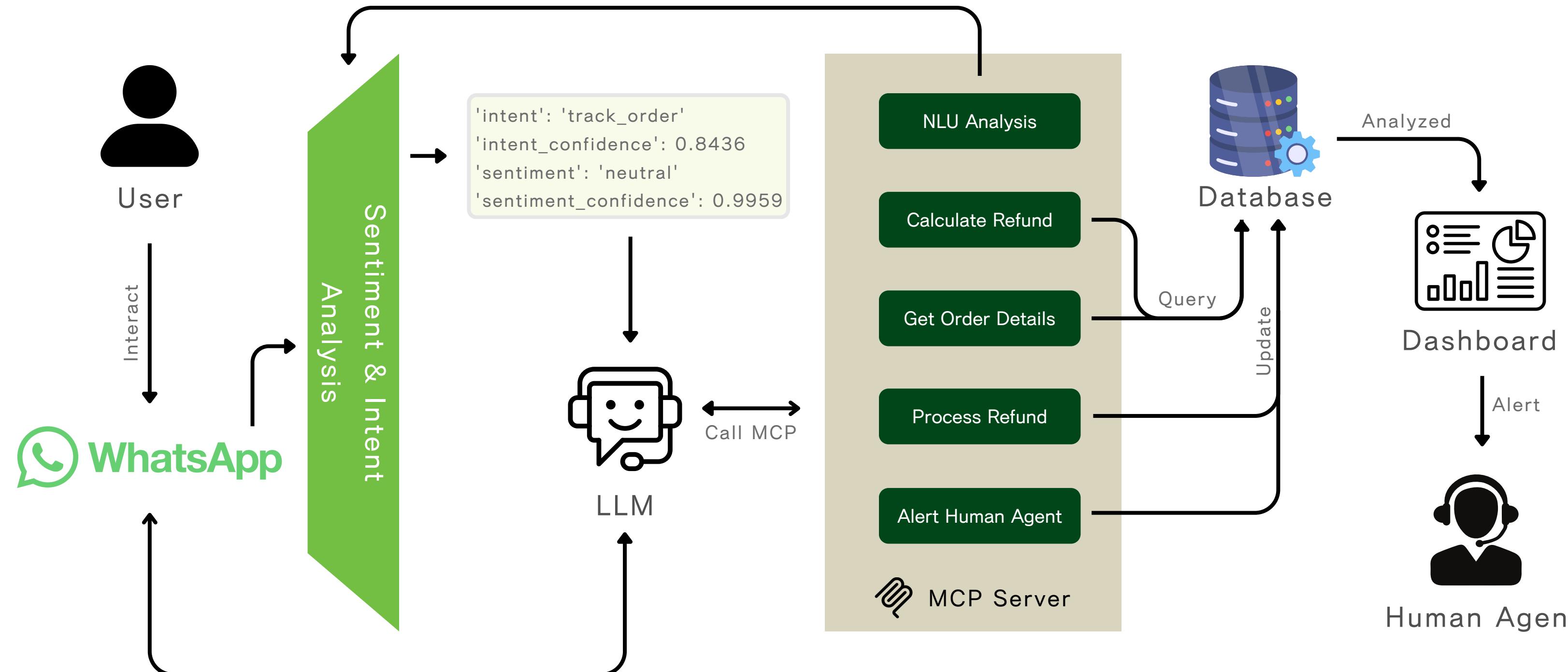
- Conversational AI
- MCP Tool Orchestration
- Intent-Driven Responses
- Human Escalation
- Real-time Dashboard



 TECH STACK



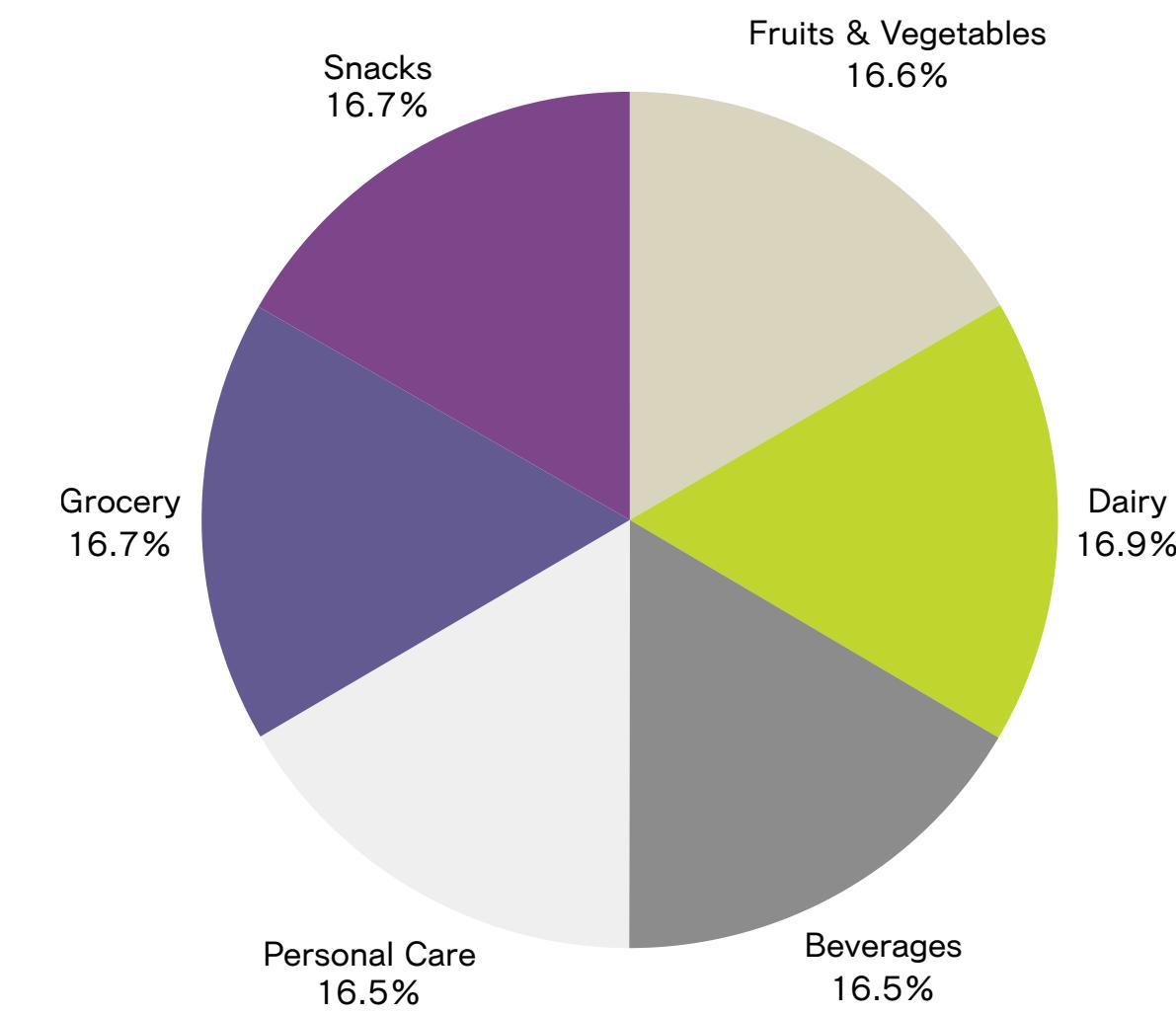
# WORKFLOW



Dataset about e-commerce grocery delivery services, focusing on Blinkit, Swiggy Instamart, and JioMart. It includes customer feedback, delivery times, service ratings, and various factors affecting delivery performance.

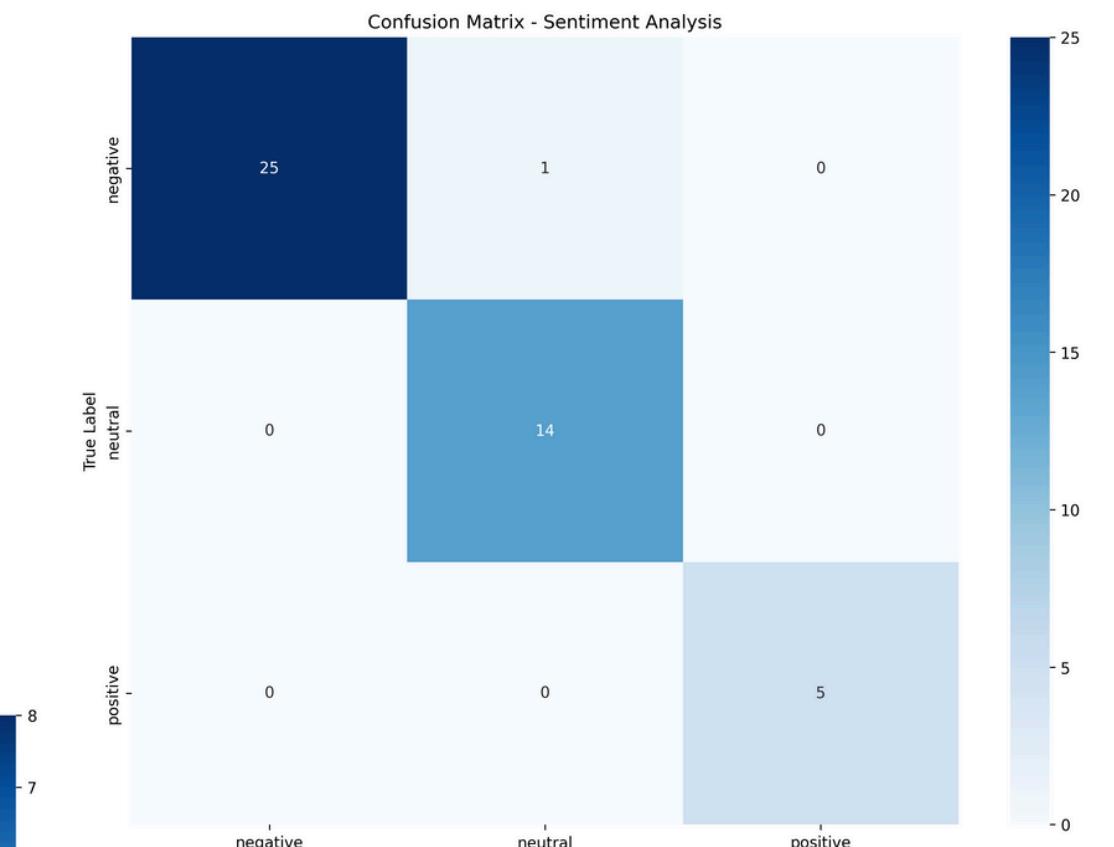
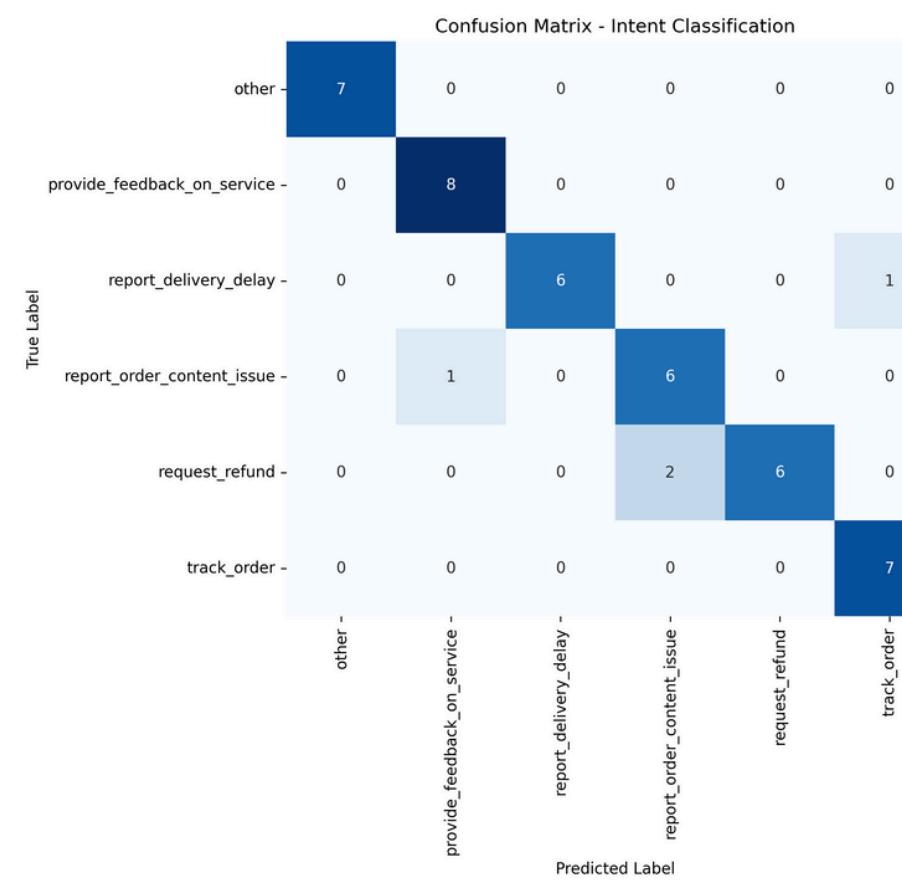
Source: Kaggle

```
_id: ObjectId('690a6f540535847d009a4642')
Order ID : "ORD000001"
Customer ID : "CUST2824"
Platform : "JioMart"
Order Date & Time : "19:29.5"
Delivery Time (Minutes) : 30
Product Category : "Fruits & Vegetables"
Order Value (INR) : 382
Customer Feedback : "Fast delivery, great service!"
Service Rating : 5
Delivery Delay : "No"
Refund Requested : "No"
```



## DISTILBERT (transformers library)

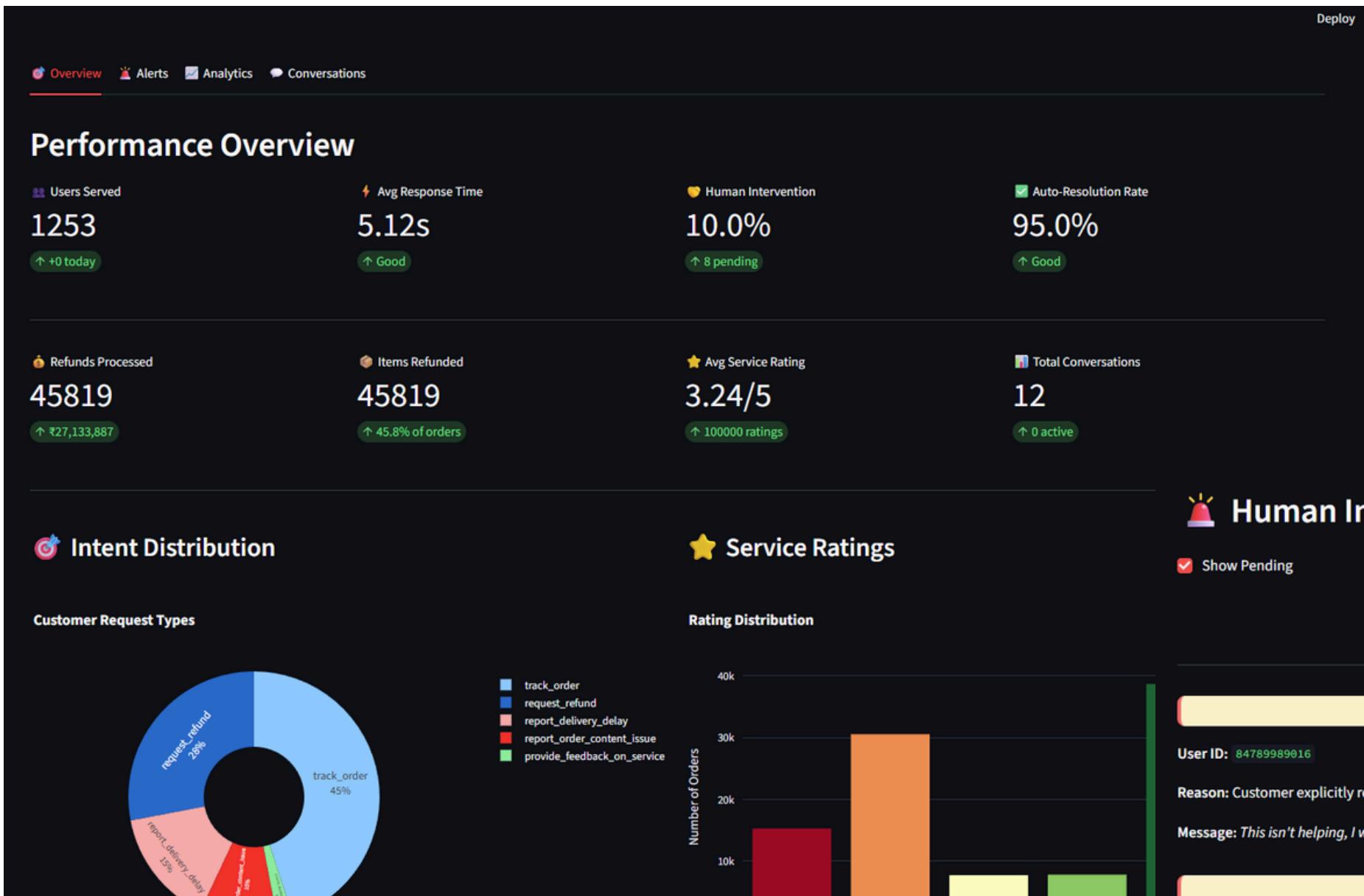
- Intent Accuracy: 88.89%
- Intent F1-Score: 0.8989
- Sentiment Accuracy: 97.78%
- Sentiment F1-Score: 0.9779
- Avg Intent Confidence: 0.9713
- Avg Sentiment Confidence: 0.9724



## HYPERPARAMETERS

- Epochs = 4
- Batch size = 16
- Learning rate = 2e-5
- Warmup steps = 1000
- Weight decay = 0.02

# ❖ DASHBOARD



### ⚠ Human Intervention Alerts

Show Pending  Show Resolved

Pending Alerts: 8

User ID: 84789989016	Time: 2025-11-15 05:52:52	<input checked="" type="checkbox"/> Resolve
Reason: Customer explicitly requested human agent	Status: <span style="color: red;">Pending</span>	Priority: medium
Message: This isn't helping, I want to chat to a human		
User ID: 84789989016	Time: 2025-11-13 23:06:13	<input checked="" type="checkbox"/> Resolve
Reason: Customer explicitly requested human agent	Status: <span style="color: red;">Pending</span>	Priority: medium
Message: I want to talk to a human agent		



# FUTURE DEVELOPMENTS

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- Improve user experiences
  - Debounce functionality
  - Faster response time
  - Response to reactions, images
- Add more functionalities
  - Email notifications for human agents
  - Product database for Q&A
- Deep learning model
  - Automatically re-trains the NLU model on the new, human-verified data collected from the dashboard



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# THANK YOU



<https://github.com/LeMinNguyen/E-com-Automated-Resolution.git>