

QuickAssist

Project Proposal

Team members:

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Problem Statement

Motivation:

- Enhance efficiency and user satisfaction by automating customer support interactions.
- Reduce customer wait times through instant and accurate responses.

Problem Statement

Problem definition:

Input: Variant A: Customer message only

Variant B: Customer message + intent label

Output: Relevant and helpful chatbot response.

NLP Tasks: Text Generation, Intent Recognition, Contextual Understanding

We compare the quality of responses generated with and without explicit intent labels to measure how intent conditioning influences the response quality.

Problem Statement

Challenges:

- Understanding customer intent accurately.
- Handling ambiguous or vague customer queries.
- Providing consistent and context-aware replies.

Training and Test Data

Customer Service For LLM

- Public dataset, [customer-service-for-llm](#)
- Intents: 27 distinct intents.
- Categories: 11 categories.
- Question/Answer Pairs: Approximately 2,700 pairs.

Dataset Entry Example:

Text: "need assistance to see my invoices from {{Person Name}}. "

Intent: check_invoice

Entities/Slots: Invoice Number: "#45678"

Training and Test Data

Bitext

- Public dataset, [Bitext](#)
- 27 Intents
- 10 Categories
- 26872 Question/Answer pairs
- 30 entity/slot types

Dataset Entry Example:

Text: "I want to return the shoes I bought last week."

Intent: `return_product`

Entities/Slots: `Product`: "shoes" , `Time`: "last week"

Evaluation:

LLM-Based Evaluation

- Use GPT-4 (or similar) to score the chatbot's responses based on:
- Helpfulness – Did it address the user's complaint?
- Fluency – Is it clearly written and grammatically correct?
- Appropriateness – Is the tone professional, polite, and relevant?

BERTScore

- compares the generated response to the reference response based on semantic similarity using BERT embeddings, capturing meaning beyond exact word matches. Suitable for open-ended responses where phrasing may vary.