AUTO TAGGING SUPPORT TICKETS USING LLMs

Problem Overview

Customer support teams receive large volumes of tickets daily. Manually categorizing these tickets is time-consuming and inconsistent. An automated tagging system using Large Language Models (LLMs) can significantly improve efficiency and response time.

Objective

To design an AI-based solution that automatically assigns relevant tags to customer support tickets using LLMs, without training a custom model.

Ticket Categories

The system classifies tickets into the following predefined categories:

- Billing
- Technical Issue
- Account Access
- Feature Request
- General Inquiry

Zero-Shot Prompting

Prompt

```
You are a customer support assistant.

Classify the following support ticket into the TOP 3 most
probable categories

from the list below, ordered from most likely to least
likely.

Categories:

Billing, Technical Issue, Account Access, Feature Request,
General Inquiry

Ticket:
```

```
"I was charged twice for my subscription"
```

```
Output format:
```

```
1. <Category>
```

```
2. <Category>
```

```
3. <Category>
```

Example Output

```
1. Billing
```

```
2. Account Access
```

```
3. General Inquiry
```

Observation

- Works without examples
- Ranking is reasonable but may vary slightly
- Suitable for fast, lightweight automation

Few-Shot Prompting

Prompt

```
You are a customer support assistant.
```

```
Examples:
```

```
Ticket: "I forgot my password and can't log in"
```

```
Top 3 Categories:
```

```
1. Account Access
```

```
2. Technical Issue
```

```
3. General Inquiry
```

```
Ticket: "The app crashes when uploading files"
```

```
Top 3 Categories:
```

```
1. Technical Issue

2. Account Access

3. General Inquiry

Now classify the following ticket:

"I was charged twice for my subscription"

Return the TOP 3 categories ranked from most to least
likely.
```

Example Output

```
1. Billing

2. Account Access

3. General Inquiry
```

Observation

- More consistent ranking
- Better handling of overlapping categories
- Preferred for production systems

Example Evaluation Table

Ticket	True Tag	Model Top-3
Charged twice	Billing	Billing, Account Access, General Inquiry
App crashes	Technical Issue	Technical Issue, Account Access, General Inquiry
Forgot password	Account Access	Account Access, Technical Issue, General Inquiry
Request refund	Billing	Account Access, Billing, General Inquiry