Lecture Notes: Decomposing Complex Tasks and Intent Classification in AI Prompts

# 1. Split Complex Tasks

Objective: Decompose complex tasks into simpler, modular components to reduce errors and increase the efficiency of AI models.

Concept:

- Just as in software engineering, where a complex system is decomposed into modular components, complex tasks submitted to a language model should be broken down.

- Complex tasks tend to have higher error rates compared to simpler ones.

- Complex tasks can often be redefined as a workflow of simpler tasks where the outputs of earlier tasks are used to construct the inputs to later tasks.

Tactics:

- Use Intent Classification: Identify the most relevant instructions for a user query by classifying their intent.

- Filter Dialogue: For dialogue applications requiring very long conversations, summarize or filter previous dialogue.

- Summarize Long Documents: Summarize long documents piecewise and construct a full summary recursively.

# 2. Intent Classification

Objective: Classify customer service queries into appropriate categories to streamline the response process.

System Instruction:

- You will be provided with customer service queries. Classify each query into a primary category and a secondary category. Provide your output in JSON format with the keys: primary and secondary.

Primary Categories:

- Billing

- Technical Support

- Account Management

- General Inquiry

Secondary Categories:

- Billing:

- Unsubscribe or upgrade

- Add a payment method

- Explanation for charge

- Dispute a charge

- Technical Support:

- Troubleshooting

- Device compatibility

- Software updates

- Account Management:

- Password reset

- Update personal information

- Close account

- Account security

- General Inquiry:

- Product information

- Pricing

- Feedback

- Speak to a human

Example User Query:

- "I need to get my internet working again."

Classification:

{ "primary": "Technical Support", "secondary": "Troubleshooting" }

# 3. Breakdown Text

Objective: Decompose broad tasks into more manageable steps to facilitate more accurate and detailed AI-generated content.

Example Scenario:

- User Request: "Write an ebook outline for children learning AI."

- AI Response:

- Title: "Adventures in AI Land"

- Chapter 1: The History of AI

- User Request for Detail: "Now detail out Chapter 1."

- AI Detailed Response:

- Chapter 1: The History of AI

- Objective: Introduce young readers to the origins and evolution of Artificial Intelligence in an engaging and easy-to-understand manner.

- Section 1.1: Welcome to AI Land

# 4. Implementation Steps

Practical Application:

1. Decompose Complex Queries: When faced with a complex user query, identify the key components and break them down into simpler, more manageable tasks.

2. Use Intent Classification: Classify user queries to better tailor responses. Utilize predefined categories to ensure the response is accurate and relevant.

3. Provide Detailed Responses: When tasked with broad or complex content generation, decompose the request into specific sections, allowing for a more detailed and structured output.