General Prompt Engineering Questions

1. What is prompt engineering, and why is it important in AI/ML models?
2. How do you craft effective prompts to improve LLM responses?
3. What is **zero-shot, one-shot, and few-shot prompting**? Can you give examples?
4. How would you design a prompt for a **speech-to-text model** to improve transcription accuracy?
5. How would you modify a prompt to **reduce bias** in a response?
6. What are **chain-of-thought (CoT) prompts**, and when would you use them?
7. What is the role of **temperature and top-k sampling** in LLM responses?
8. What strategies would you use if an LLM is **hallucinating incorrect information**?
9. How do **system prompts** differ from **user prompts**, and when should each be used?
10. How would you design a prompt to classify **positive, negative, or neutral sentiment** from text?

Speech Recognition (ASR) Questions

11. What is **Automatic Speech Recognition (ASR)**, and how does it work?
12. What are some popular ASR models (e.g., **Whisper, DeepSpeech, Wav2Vec**)? How do they differ?
13. How do ASR models handle **accents and background noise**?
14. What preprocessing steps are important for improving **speech-to-text accuracy**?
15. What is **word error rate (WER)**, and why is it important?
16. How would you design a prompt to **summarize transcribed speech**?
17. How would you prompt an LLM to **correct ASR errors** in a transcript?
18. How do **language models** help in improving **ASR outputs**?
19. What challenges do ASR systems face with **code-switching (mixing languages)**?
20. How would you handle **speaker diarization** in transcribed speech?

Emotion Recognition Questions

21. What is **emotion recognition in speech**, and how is it achieved?
22. What features of speech are useful for **emotion detection** (e.g., pitch, tone, prosody)?
23. What are some common **datasets** used for training **emotion recognition models**?
24. How would you craft a prompt to classify emotions in transcribed speech?
25. What is the difference between **lexical-based emotion recognition** and **acoustic-based emotion recognition**?
26. How would you use **LLMs with ASR output** to enhance **emotion detection**?
27. How can **context-aware prompts** improve emotion classification accuracy?
28. How do **multi-modal emotion recognition systems** work (text + audio + facial expressions)?
29. How would you handle **ambiguity in emotional expressions** in speech?

30. What are the challenges of **emotion recognition in noisy environments**?

Applied and Practical Scenarios

31. How would you design a prompt to extract **key topics from a speech transcript**?
32. If an ASR model is struggling with **technical jargon**, how would you improve its output using prompts?
33. How would you use a **prompt to filter out filler words ("um", "uh", "like")** in a transcript?
34. How would you design a system that takes **transcribed speech and generates a summary**?
35. If an emotion recognition model is misclassifying **sarcasm**, how would you refine your prompts?
36. How can **whisper ASR + GPT-4** be used together for **emotion-aware chatbot responses**?
37. How would you modify an LLM's output to **adjust tone and sentiment** in response generation?
38. Suppose a user speaks in multiple languages within a sentence—how would you handle **multilingual speech emotion recognition**?
39. What considerations are needed for **real-time emotion recognition** in voice assistants?
40. How would you use LLMs to **translate speech and retain emotional tone**?