GENERATIVE AI INTERVIEW TOPICS

1. **Introduction to Generative AI**
    - What is Generative AI?
        - Overview of generative models
        - Differences between generative and discriminative models
    - Types of Generative AI
        - Text-based models (e.g., GPT, LLaMA)
        - Image generation models (e.g., DALL·E, Midjourney)
        - Audio generation and music composition
    - Use Cases and Applications
        - Content creation, chatbots, art, and media
2. **Foundations of Machine Learning & Deep Learning**
    - Review of Machine Learning Concepts
        - Supervised vs. unsupervised learning
    - Deep Learning Basics
        - Neural networks architecture
        - Activation functions and training processes
    - Introduction to Autoencoders and GANs
        - How they work and their relevance in Generative AI
3. **Text Generation Models**
    - Understanding Language Models
        - Recurrent Neural Networks (RNNs)
        - Transformers architecture
    - Hands-on with GPT-style Models
        - How GPT works: attention mechanisms, training large datasets
        - Fine-tuning a pre-trained model
    - NLP Tasks
        - Text completion, summarization, and chatbot development
4. **Image Generation Techniques**
    - Introduction to Generative Adversarial Networks (GANs)
        - Structure of GANs: generator and discriminator
        - Types of GANs (e.g., StyleGAN, CycleGAN)
    - Diffusion Models and Their Importance
        - Basic principles and applications in high-quality image generation

5. **Audio and Video Generation**
    - Audio Synthesis Models
        - Text-to-speech (TTS) and music generation technologies
    - Video Generation and Deepfake Technologies
        - How video synthesis models function
        - Ethical implications and responsible use
    - Project: Creating a Simple Audio or Video Clip Using AI Tools

6. **Advanced Topics and Tools**
    - Fine-Tuning and Custom Model Training
        - Techniques for training custom generative models
    - Exploring APIs and Frameworks
        - OpenAI's API, Hugging Face's Transformers library, and others
    - Prompt Engineering
        - Writing effective prompts for optimal outputs
7. **Ethical Considerations and Future Trends**
    - Ethical and Social Implications
        - Addressing biases in models and data
        - Challenges with deepfakes and misinformation
    - Trends and Future of Generative AI
        - Advances in multi-modal models
        - Emerging applications and breakthroughs