■ My Flashcards

Exported on December 13, 2025 at 02:06 AM

Total Cards: 150

Card 1

■ Question:

Define: Answer

■ Answer:

b) They produce high-quality and detailed images.

Card 2

■ Question:

What are d) They?

■ Answer:

easy to use.

Card 3

■ Question:

What are c) They?

■ Answer:

stable and predictable.

Card 4

■ Question:

What are a) They?

■ Answer:

fast and efficient.

Card 5

■ Question:

What is What?

■ Answer:

the main advantage of Diffusion Models?

Card 6

■ Question:

Define: Answer

■ Answer:

a) To generate new images.

Card 7

■ Question:

What is What?

■ Answer:

the purpose of the generator in a GAN?

Card 8

■ Question:

Define: Answer

■ Answer:

a) Zero-shot uses pre-trained knowledge, while few-shot uses examples.

Card 9

■ Question:

What is What?

■ Answer:

the main difference between zero-shot and few-shot prompting?

Card 10

■ Question:

What is * **Diffusion Model architecture**: x_t = x_{t-1} + \epsilon * \sigma^{-1} (x_{t-1} - x_{t-2}), where x_t?

■ Answer:

the output at time t, \epsilon is the noise vector, and \sigma is the standard deviation.

Card 11

■ Question:

What is * **GAN architecture: G(z) = x, where G?**

■ Answer:

the generator and z is the input noise vector.

Card 12

■ Question:

What are **Equations/Formulas * **Transformer architecture**: Q = K^T * V, where Q, K, and V?**

■ Answer:

the query, key, and value vectors.

Card 13

■ Question:

Define: * **Diffusion Model**

■ Answer:

Generate a new image of a landscape.

Card 14

■ Question:

Define: * **GAN**

■ Answer:

Generate a new image of a cat.

Card 15

■ Question:

Define: * **LLM**

■ Answer:

Translate "Hello" into Spanish.

Card 16

■ Question:

Define: * **Chain-of-thought prompting**

■ Answer:

A shop had 30 apples, then bought 20 more.

Card 17

■ Question:

Define: * **Few-shot prompting**

■ Answer:

Food: Pizza → Category: Fast food, Food: Dosa → Category: South Indian, Task: Food: Sushi → Category: ?

Card 18

■ Question:

Define: **Examples** * **Zero-shot prompting**

■ Answer:

Translate "Good morning" into French.

Card 19

■ Question:

Define: * **Diffusion Model**

■ Answer:

A type of Generative AI model based on denoising diffusion process.

Card 20

■ Question:

Define: * **GAN (Generative Adversarial Network)**

■ Answer:

A type of Generative AI model that consists of two neural networks trained together.

Card 21

■ Question:

Define: * **LLM (Large Language Model)**

■ Answer:

A type of Generative AI model based on Transformer architecture.

Card 22

■ Question:

Define: * **Chain-of-thought**

■ Answer:

Encourages the model to show step-by-step reasoning before giving the final answer.

Card 23

■ Question:

Define: * **Few-shot**

■ Answer:

The user provides a few examples showing how the task should be done.

Card 24

■ Question:

What is **Definitions** * **Zero-shot**: The model?

■ Answer:

given only the instruction and must complete the task using its pre-trained knowledge.

Card 25

■ Question:

Define: * **Code Assistants (Copilot)**

■ Answer:

Analyze code context, predict next lines or entire functions, fix errors and generate documentation.

Card 26

■ Question:

Define: * **Meeting Assistants (Zoom AI)**

■ Answer:

STT model transcribes speech, LLM summarizes meeting content, embedding model detects topics, tasks, and action items.

Card 27

■ Question:

Define: * **Speech Systems (TTS – Text-to-Speech)**

■ Answer:

Convert text → phonemes → acoustic representation, neural vocoder generates human-like audio.

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■ Question:

Define: * **Speech Systems (STT – Speech-to-Text)**

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Convert audio waveform into spectrogram, speech encoder recognizes phonemes and words, decoder generates text output.

Card 29

■ Question:

Define: * **Image Captioning Systems**

■ Answer:

Image → vision encoder extracts features, text decoder converts visual features to words.

Card 30

■ Question:

Define: * **RAG (Retrieval-Augmented Generation) Systems**

■ Answer:

Convert user query into embeddings, retrieve relevant documents from a vector database, and LLM reads the retrieved documents and generates an accurate answer.

Card 31

■ Question:

Define: * **Diffusion Models**

■ Answer:

Based on denoising diffusion process, training: add noise to images in many steps, generation: start from noise → gradually remove noise → final image.

Card 32

■ Question:

Define: * **GANs (Generative Adversarial Networks)**

■ Answer:

Consists of two neural networks trained together: Generator and Discriminator.

Card 33

■ Question:

Define: * **LLMs (Large Language Models)**

■ Answer:

Based on Transformer architecture, uses self-attention layers to understand relationships between words.

Card 34

■ Question:

Define: * **Chain-of-thought prompting**

■ Answer:

Encourages the model to show step-by-step reasoning before giving the final answer.

Card 35

■ Question:

Define: * **Few-shot prompting**

■ Answer:

The user provides a few examples showing how the task should be done.

Card 36

■ Question:

What is **Key Points** * **Zero-shot prompting**: The model?

■ Answer:

given only the instruction and must complete the task using its pre-trained knowledge.

Card 37

■ Question:

Define: **Study Summary

■ Answer:

Generative AI** **Introduction** Generative AI refers to a subset of artificial intelligence that enables machines to generate new, original content, such as text, images, or audio.

Card 38

■ Question:

Define: * **Meeting assistant**

■ Answer:

Use speech model to transcribe speech, LLM to summarize meeting content, and embedding model to detect topics, tasks, and action items.

Card 39

■ Question:

Define: * **Speech system**

■ Answer:

Use speech encoder to recognize phonemes and words, and use decoder to generate text output.

Card 40

■ Question:

Define: * **Image captioning system**

■ Answer:

Use vision encoder to extract features from an image, and use language decoder to generate captions.

Card 41

■ Question:

Define: **Examples** * **RAG system**

■ Answer:

Convert user query into embeddings, retrieve relevant documents from a vector database, and use LLM to generate accurate answers.

Card 42

■ Question:

Define: * **Code assistant**

■ Answer:

A type of AI system that uses code-specific LLMs to analyze code context and predict next lines or entire functions.

Card 43

■ Question:

Define: * **Meeting assistant**

■ Answer:

A type of AI system that uses a combination of speech models, LLMs, and embedding models to summarize meeting content.

Card 44

■ Question:

Define: * **Speech system**

■ Answer:

A type of AI system that uses a combination of speech encoders and decoders to generate text output.

Card 45

■ Question:

Define: * **Image captioning system**

■ Answer:

A type of AI system that uses a combination of vision encoders and language decoders to generate captions.

Card 46

■ Question:

Define: **Definitions** * **RAG system**

■ Answer:

A type of AI system that uses a combination of embedding models and LLMs to generate accurate answers.

Card 47

■ Question:

Define: * **Code assistants**

■ Answer:

Use code-specific LLMs to analyze code context and predict next lines or entire functions.

Card 48

■ Question:

Define: * **Meeting assistants**

■ Answer:

Use a combination of speech models, LLMs, and embedding models to summarize meeting content.

Card 49

■ Question:

Define: * **Speech systems**

■ Answer:

Use a combination of speech encoders and decoders to generate text output.

Card 50

■ Question:

Define: * **Image captioning systems**

■ Answer:

Use a combination of vision encoders and language decoders to generate captions.

Card 51

■ Question:

Define: **Key Points** * **RAG systems**

■ Answer:

Use a combination of embedding models and LLMs to generate accurate answers.

Card 52

■ Question:

Define: **Mod 4

■ Answer:

Generative AI Applications** **Introduction** Generative AI has a wide range of applications, including image captioning, RAG systems, meeting assistants, speech systems, and code assistants.

Card 53

■ Question:

Define: Answer

■ Answer:

a) Slow generation because of many denoising steps.

Card 54

■ Question:

What is What?

■ Answer:

the main drawback of using Diffusion Models?

Card 55

■ Question:

Define: Answer

■ Answer:

a) Produces sharp, high-quality images.

Card 56

■ Question:

What is What?

■ Answer:

the main benefit of using GANs?

Card 57

■ Question:

Define: Answer

■ Answer:

b) Zero-shot uses pre-trained knowledge, few-shot uses examples.

Card 58

■ Question:

What is c) Zero-shot?

■ Answer:

used for common tasks, few-shot is used for niche tasks.

Card 59

■ Question:

What is What?

■ Answer:

the main difference between zero-shot and few-shot prompting?

Card 60

■ Question:

What is * **Generator-Discriminator architecture**: G(z) → D(G(z)), where G?

■ Answer:

the Generator and D is the Discriminator.

Card 61

■ Question:

What is **Equations/ Formulas * **Self-attention mechanism**: Q = K^T * V, where Q?**

■ Answer:

the query, K is the key, and V is the value.

Card 62

■ Question:

Define: * **Chain-of-thought prompting**

■ Answer:

A shop had 30 apples, then bought 20 more.

Card 63

■ Question:

Define: * **Few-shot prompting**

■ Answer:

Food: Pizza → Category: Fast food, Food: Dosa → Category: South Indian, Task: Food: Sushi → Category: ?

Card 64

■ Question:

Define: **Examples** * **Zero-shot prompting**

■ Answer:

Translate "Good morning" into French.

Card 65

■ Question:

Define: * **Diffusion Model**

■ Answer:

A type of AI model that uses a denoising diffusion process to generate images.

Card 66

■ Question:

Define: * **GAN**

■ Answer:

A type of AI model that consists of two neural networks trained together: Generator and Discriminator.

Card 67

■ Question:

Define: * **LLM**

■ Answer:

A type of AI model that uses self-attention mechanisms to understand relationships between words.

Card 68

■ Question:

Define: * **Chain-of-thought**

■ Answer:

A reasoning process that involves breaking down a problem into smaller sub-problems and solving each one step-by-step.

Card 69

■ Question:

Define: * **Few-shot learning**

■ Answer:

The ability of a model to learn a task with only a few examples.

Card 70

■ Question:

Define: **Definitions** * **Zero-shot learning**

■ Answer:

The ability of a model to perform a task without any prior training on that task.

Card 71

■ Question:

Define: * **Diffusion Models**

■ Answer:

Based on denoising diffusion process, training: add noise to images in many steps, generation: start from noise → gradually remove noise → final image.

Card 72

■ Question:

Define: * **GANs (Generative Adversarial Networks)**

■ Answer:

Consists of two neural networks trained together: Generator and Discriminator.

Card 73

■ Question:

Define: * **LLMs (Large Language Models)**

■ Answer:

Based on Transformer architecture, uses self-attention layers to understand relationships between words.

Card 74

■ Question:

Define: * **Chain-of-thought prompting**

■ Answer:

Encourages the model to show step-by-step reasoning before giving the final answer.

Card 75

■ Question:

Define: * **Few-shot prompting**

■ Answer:

The user provides a few examples showing how the task should be done.

Card 76

■ Question:

What is **Key Points** * **Zero-shot prompting**: The model?

■ Answer:

given only the instruction and must complete the task using its pre-trained knowledge.

Card 77

■ Question:

Define: **Structured Study Summary** **Mod 2

■ Answer:

Generative AI Fundamentals** **Introduction** Generative AI refers to a class of artificial intelligence models that can generate new content, such as text, images, or audio, based on a given prompt or input.

Card 78

■ Question:

Define: Answer

■ Answer:

a) Analyze code context, predict next lines or entire functions, fix errors and generate documentation.

Card 79

■ Question:

What is What?

■ Answer:

the main application of a Code Assistant?

Card 80

■ Question:

Define: Answer

■ Answer:

b) Extremely high-quality and detailed images.

Card 81

■ Question:

What is What?

■ Answer:

the main benefit of using a Diffusion Model?

Card 82

■ Question:

Define: Answer

■ Answer:

a) Zero-shot uses pre-trained knowledge, few-shot uses examples.

Card 83

■ Question:

What is What?

■ Answer:

the main difference between zero-shot and few-shot prompting?

Card 84

■ Question:

Define: **Equations/Formulas** * **Self-attention layer**

■ Answer:

Q = K^T * V / sqrt(d) * **Generator**: G(z) = σ(Wz + b) * **Discriminator**: D(x) = σ(Wx + b) **Short Quiz** 1.

Card 85

■ Question:

Define: * **Diffusion Model**

■ Answer:

Generate a new image of a landscape.

Card 86

■ Question:

Define: * **GAN**

■ Answer:

Generate a new image of a cat.

Card 87

■ Question:

Define: * **LLM**

■ Answer:

Translate a sentence from English to Spanish.

Card 88

■ Question:

Define: * **Chain-of-thought prompting**

■ Answer:

A shop had 30 apples, then bought 20 more.

Card 89

■ Question:

Define: * **Few-shot prompting**

■ Answer:

Food: Pizza → Category: Fast food, Food: Dosa → Category: South Indian, Task: Food: Sushi → Category: ?

Card 90

■ Question:

Define: **Examples** * **Zero-shot prompting**

■ Answer:

Translate "Good morning" into French.

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■ Question:

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■ Question:

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A type of AI model that uses self-attention layers to understand relationships between words.

Card 94

■ Question:

Define: * **Chain-of-thought**

■ Answer:

Encourages the model to show step-by-step reasoning before giving the final answer.

Card 95

■ Question:

Define: * **Few-shot learning**

■ Answer:

The user provides a few examples showing how the task should be done.

Card 96

■ Question:

What is **Definitions** * **Zero-shot learning**: The model?

■ Answer:

given only the instruction and must complete the task using its pre-trained knowledge.

Card 97

■ Question:

Define: * **Code Assistants**

■ Answer:

Analyze code context, predict next lines or entire functions, fix errors and generate documentation.

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■ Question:

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STT model transcribes speech, LLM summarizes meeting content, embedding model detects topics, tasks, and action items.

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Convert text → phonemes → acoustic representation, neural vocoder generates human-like audio.

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Consists of two neural networks trained together: Generator and Discriminator.

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■ Question:

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Based on Transformer architecture, uses self-attention layers to understand relationships between words.

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■ Question:

Define: * **Chain-of-thought prompting**

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Encourages the model to show step-by-step reasoning before giving the final answer.

Card 107

■ Question:

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The user provides a few examples showing how the task should be done.

Card 108

■ Question:

What is **Key Points** * **Zero-shot prompting**: The model?

■ Answer:

given only the instruction and must complete the task using its pre-trained knowledge.

Card 109

■ Question:

Define: **Study Summary

■ Answer:

Generative AI** **Introduction** Generative AI refers to a class of artificial intelligence (AI) models that can generate new, original content, such as text, images, or audio.

Card 110

■ Question:

Define: Answer

■ Answer:

a) They can generate high-quality images.

Card 111

■ Question:

What is What?

■ Answer:

the main advantage of Diffusion Models over other Generative AI models?

Card 112

■ Question:

Define: Answer

■ Answer:

a) To generate new content.

Card 113

■ Question:

What is b) To check if the generated content?

■ Answer:

real or fake.

Card 114

■ Question:

What is What?

■ Answer:

the purpose of the Generator in a GAN?

Card 115

■ Question:

Define: Answer

■ Answer:

a) Zero-shot uses pre-trained knowledge, while few-shot uses examples.

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the main difference between zero-shot and few-shot prompting?

Card 117

■ Question:

What is * **Generator-Discriminator architecture: Generator: x → G(x), Discriminator: x → D(x), where x?**

■ Answer:

the input data.

Card 118

■ Question:

What are **Equations/Formulas * **Self-attention layer**: Q = K^T * V, where Q, K, and V?**

■ Answer:

the query, key, and value vectors.

Card 119

■ Question:

Define: * **Diffusion Model**

■ Answer:

Generate high-quality images, create videos, or produce 3D models.

Card 120

■ Question:

Define: * **GAN**

■ Answer:

Generate realistic images, create art, or produce music.

Card 121

■ Question:

Define: * **LLM**

■ Answer:

Translate text from one language to another, summarize long documents, or generate code.

Card 122

■ Question:

Define: * **Chain-of-thought prompting**

■ Answer:

A shop had 30 apples, then bought 20 more.

Card 123

■ Question:

Define: * **Few-shot prompting**

■ Answer:

Food: Pizza → Category: Fast food, Food: Dosa → Category: South Indian, Task: Food: Sushi → Category: ?

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Translate 'Good morning' into French.

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■ Question:

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■ Answer:

Encourages the model to show step-by-step reasoning before giving the final answer.

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Define: * **Few-shot learning**

■ Answer:

The user provides a few examples showing how the task should be done.

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■ Question:

What is **Definitions** * **Zero-shot learning**: The model?

■ Answer:

given only the instruction and must complete the task using its pre-trained knowledge.

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Encourages the model to show step-by-step reasoning before giving the final answer.

Card 141

■ Question:

Define: * **Few-shot prompting**

■ Answer:

The user provides a few examples showing how the task should be done.

Card 142

■ Question:

What is **Key Points** * **Zero-shot prompting**: The model?

■ Answer:

given only the instruction and must complete the task using its pre-trained knowledge.

Card 143

■ Question:

Define: **Structured Study Summary

■ Answer:

Generative AI** **Introduction** Generative AI refers to a class of artificial intelligence models that can generate new, original content, such as text, images, or audio.

Card 144

■ Question:

a) Creates new text, images, or audio b) Learns patterns from large datasets c) Responds creatively to prompts d) All of the above Answer: d) All of the above

■ Answer:

Recall details / explanation: a) Creates new text, images, or audio b) Learns patterns from large datasets c) Responds creatively to prompts d) All of the above Answer: d) All of the above

Card 145

■ Question:

What is the key feature of Generative AI systems?

■ Answer:

Recall details / explanation: What is the key feature of Generative AI systems?

Card 146

■ Question:

a) Changes colors, fonts, sizes, and alignment b) Modifies request or response c) Decides which function runs for a given URL d) Indicates the status of a request Answer: a) Changes colors, fonts, sizes, and alignment 3.

■ Answer:

Recall details / explanation: a) Changes colors, fonts, sizes, and alignment b) Modifies request or response c) Decides which function runs for a given URL d) Indicates the status of a request Answer: a) Changes colors, fonts, sizes, and alignment 3.

Card 147

■ Question:

What is the role of CSS in improving webpage appearance?

■ Answer:

Recall details / explanation: What is the role of CSS in improving webpage appearance?

Card 148

■ Question:

a) Face recognition on smartphones b) Image captioning c) Text-to-image prompts d) Prompt engineering Answer: a) Face recognition on smartphones 2.

■ Answer:

Recall details / explanation: a) Face recognition on smartphones b) Image captioning c) Text-to-image prompts d) Prompt engineering Answer: a) Face recognition on smartphones 2.

Card 149

■ Question:

What is the everyday use of computer vision in modern systems?

■ Answer:

Recall details / explanation: What is the everyday use of computer vision in modern systems?

Card 150

■ Question:

****Key Points** * **Mod 2** + Everyday use of computer vision: face recognition on smartphones + Retrieval-Augmented Generation (RAG): combines retrieval and generation to improve accuracy + Text-to-text prompts: input text → output text (e.g., answers, summaries) + Text-to-image prompts: input text → output image (e.g., pictures or illustrations) + Prompt engineering: designing clear and specific prompts to improve AI results + AI-assisted software testing: automates finding bugs in softw...**

■ Answer:

Recall details / explanation: **Key Points** * **Mod 2** + Everyday use of computer vision: face recognition on smartphones + Retrieval-Augmented Generation (RAG): combines retrieval and generation to improve accuracy + Text-to-text prompts: input text → output text (e.g., answers, summaries) + Text-to-image prompts: input text → output image (e.g., pictures or illustrations) + Prompt engineering: designing clear and specific prompts to improve AI results + AI-assisted software testing: automates finding bugs in software + Generative AI: creates new text, images, or audio from patterns learned from large datasets * **Mod 3** + Semantic elements in HTML5: , , , + Role of CSS in improving webpage appearance: changes colors, fonts, sizes, and align...