Module 1

What is the primary purpose of prompt engineering in deep learning?

Options

Optimizing training data

Enhancing model interpretability

Crafting effective queries or inputs for the model

Improving model deployment

Next

How does prompt engineering contribute to the explainability of deep learning models?

Options

By simplifying neural network architectures

By providing detailed comments in the code

By generating human-readable model prompts

By increasing the number of training epochs

Previous   Next

3 **Choose the correct answer**

How does Deep Learning (DL) differ from Machine Learning (ML)?

Options

DL requires more computational power

ML is a subset of DL

DL involves neural networks with multiple layers

ML is only focused on supervised learning

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4 **Choose the correct answer**

What is a common feature shared by both Machine Learning (ML) and Deep Learning (DL)?

Options

Reliance on rule-based systems

Ability to learn from data

Strict adherence to pre-defined algorithms

Lack of adaptability to new information

Previous | Next

5 **Choose the correct answer**

What is a key advantage of conducting no-code experiments in AI?

Options

Greater control over model architecture

Faster experimentation and prototyping

Improved model interpretability

Enhanced scalability of models

Previous   Next

6 **Choose the correct answer**

According to the syllabus, how did Generative AI models evolve over the last decade?

Options

From GANs to VAEs

From N-grams to GPT

From supervised learning to unsupervised learning

From decision trees to random forests

Previous   Next

7 Choose the correct answer

What technological advancements have significantly influenced the evolution of Generative AI models?

Options

Quantum computing and robotics

Blockchain and cryptocurrency

Cloud computing and edge computing

GPUs and parallel processing

Previous   Next

8 Choose the correct answer

What is the primary purpose of GANs in AI?

Options

Unsupervised learning

Data classification

Image generation

Speech recognition

Previous   Next

9 Choose the correct answer

What is a key difference between Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs)?

Options

GANs focus on image classification, while VAEs focus on text generation

GANs use unsupervised learning, while VAEs use supervised learning

GANs involve a generator and a discriminator, while VAEs involve an encoder and a decoder

GANs require more training data compared to VAEs

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10 Choose the correct answer

What is the focus of "replica the future AI human model" in the syllabus?

Options

Creating humanoid robots

Simulating future human behavior

Understanding the evolution of AI models

Designing advanced virtual reality systems

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Module – 2

1 **Choose the correct answer**

What is the main purpose of gradient descent in the context of linear regression?

Options

Minimizing the cost function to find optimal model parameters

Maximizing the cost function for accurate predictions

Reducing the number of training epochs

Introducing non-linearity to the regression model

2 **Choose the correct answer**

In the context of RNNs, what does the term "exploding gradient" refer to?

Options

Gradual disappearance of useful information during training

Rapid increase in the magnitude of gradients, leading to numerical instability

Inability to capture temporal dependencies in sequential data

High sensitivity to small changes in the input data

3 Choose the correct answer

Which type of neural network is well-suited for image recognition tasks?

Options

Feedforward Neural Network (FNN)

Convolutional Neural Network (CNN)

Recurrent Neural Network (RNN)

Radial Basis Function Network (RBFN)

4 Choose the correct answer

What is a key advantage of TensorFlow's static computation graph over PyTorch's dynamic computation graph?

Options

Greater flexibility for dynamic input sizes

Improved support for production deployments

Easier debugging during model development

Enhanced memory efficiency

5 Choose the correct answer

What is a key advantage of using deep learning frameworks like PyTorch and TensorFlow?

Options

Limited support for neural network architectures

Compatibility only with specific programming languages

Abstraction of complex operations, making model development easier

Exclusively designed for supervised learning tasks

6 Choose the correct answer

What is a benefit of using a dynamic computation graph, as seen in PyTorch, over a static computation graph?

Options

Increased memory efficiency

Better support for production deployments

Easier model debugging

Flexibility for dynamic and changing input sizes

7 **Choose the correct answer**

Question: In the context of sequence modeling, what is the primary advantage of using Long Short-Term Memory (LSTM) networks over traditional Recurrent Neural Networks (RNNs)?

Options

Better performance in image recognition tasks

Ability to capture long-range dependencies in sequences

Faster training times for small datasets

Simplicity in model architecture design

8 **Choose the correct answer**

In the context of sequence modeling, what advantage do Transformers have over both RNNs and LSTMs?

Options

Simplicity in architecture design

Improved performance in image recognition

Ability to capture long-range dependencies

Parallelization of computations for faster training

9 Choose the correct answer

What is the primary purpose of using Recurrent Neural Networks (RNNs) in sequential data analysis?

Options

Feature extraction in time-independent data

Capturing temporal dependencies in sequential data

Reducing overfitting in small datasets

Enhancing interpretability of the model

10 Choose the correct answer

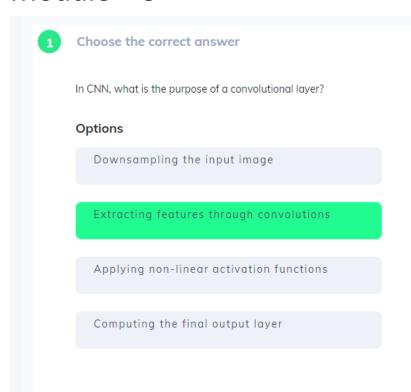What is the primary advantage of using Transformers in natural language processing tasks?
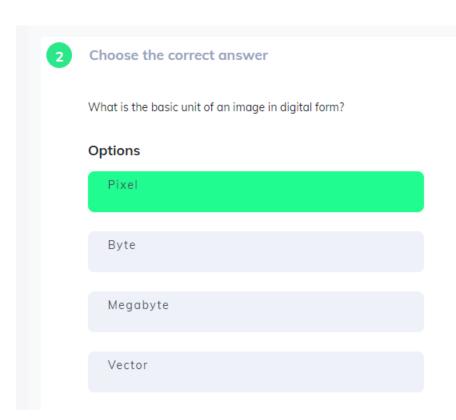
Options

Sequential processing

Ability to capture long-range dependencies

Simplicity in architecture design

Parallelization of computations

Module – 3

1 Choose the correct answer

In CNN, what is the purpose of a convolutional layer?

Options

Downsampling the input image

Extracting features through convolutions

Applying non-linear activation functions

Computing the final output layer

2 Choose the correct answer

What is the basic unit of an image in digital form?

Options

Pixel

Byte

Megabyte

Vector

3 **Choose the correct answer**

What is the purpose of pooling layers in a CNN?

Options

Increasing the size of the input image

Reducing the spatial dimensions of the input

Adding noise to the image

Introducing non-linearity to the model

4 **Choose the correct answer**

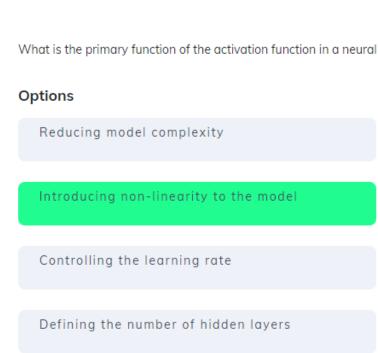What does the term "epoch" refer to in the context of training a neural network?

Options

A single forward pass and backward pass of all training examples

The total number of layers in the neural network

The number of neurons in the output layer

The learning rate during training

5 Choose the correct answer

Which popular transformer-based model is available in the Hugging Face Model Hub for natural language understanding?

Options

AlexNet

BERT (Bidirectional Encoder Representations from Transformers)

VGG16

ResNet

6 Choose the correct answer

What is the primary function of the activation function in a neural network?

Options

Reducing model complexity

Introducing non-linearity to the model

Controlling the learning rate

Defining the number of hidden layers

7 **Choose the correct answer**

What does the term "dropout" refer to in the context of neural networks?

Options

Eliminating certain neurons randomly during training to prevent overfitting

Adding noise to the input data

Increasing the size of the training dataset

Reducing the learning rate

8 **Choose the correct answer**

What is the purpose of max pooling in CNNs?

Options

Increasing the spatial dimensions of the input

Reducing the computational cost

Adding noise to the image

Selecting the maximum value from a set of values in a region

9 Choose the correct answer

What role does the attention mechanism play in transformer-based models?

Options

Increasing model complexity

Enhancing model interpretability

Parallelization of computations

Capturing long-range dependencies in sequences

10 Choose the correct answer

Which Hugging Face library is commonly used for working with transformer models in PyTorch?
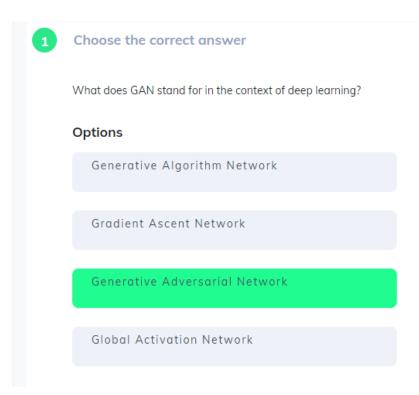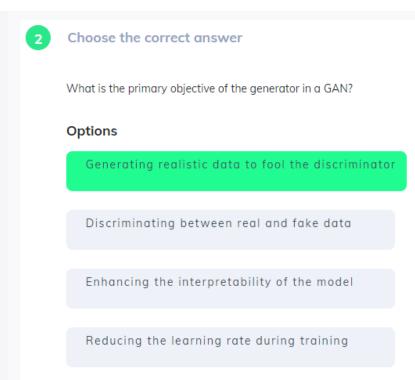
Options

HugPy

TransformPy

Transformers

TorchFace

Module – 4

1 Choose the correct answer

What does GAN stand for in the context of deep learning?

Options

Generative Algorithm Network

Gradient Ascent Network

Generative Adversarial Network

Global Activation Network

2 Choose the correct answer

What is the primary objective of the generator in a GAN?

Options

Generating realistic data to fool the discriminator

Discriminating between real and fake data

Enhancing the interpretability of the model

Reducing the learning rate during training

3 Choose the correct answer

In GANs, what is the role of the discriminator during training?

Options

Generating realistic data

Evaluating the generated data and distinguishing between real and fake

Enhancing the diversity of generated data

Setting the learning rate for the generator

4 Choose the correct answer

What is a common loss function used in GANs for training the generator and discriminator?

Options

Cross-Entropy Loss

Mean Squared Error

Kullback-Leibler Divergence

Binary Cross-Entropy Loss

5 Choose the correct answer

What is the primary characteristic that distinguishes Conditional GANs (cGANs) from traditional GANs?

Options

They have more layers in the generator

They use additional convolutional layers

They can generate samples conditioned on specific input data

They have a higher learning rate

6 Choose the correct answer

What is the primary focus of StyleGAN in the context of image generation?

Options

Capturing long-range dependencies

Enhancing interpretability

Improving stylistic aspects of generated images

Reducing computational cost

7 Choose the correct answer

What does VAE stand for in the context of deep learning?

Options

Visual Augmentation Encoder

Variational Autoencoder

Virtual Adversarial Experiment

Validated Activation Encoder

8 Choose the correct answer

What is the key difference between VAEs and traditional autoencoders?

Options

VAEs have a stochastic encoding layer

Traditional autoencoders have a variational encoding layer

VAEs have a deterministic decoding layer

Traditional autoencoders have a generative decoding layer

9 Choose the correct answer

Which type of GAN is designed to generate high-quality images with fine details and realistic textures?

Options

DCGAN (Deep Convolutional GAN)

WGAN (Wasserstein GAN)

CycleGAN

StyleGAN

10 Choose the correct answer

In the context of deep learning, what does "pretrained model" refer to?

Options

A model trained on a different task and available for use in other applications

A model that is not suitable for fine-tuning

A model trained only on synthetic data

A model trained exclusively on image data

Module – 5

Choose the correct answer

What is the primary purpose of prompt engineering in the context of language models?

Options

Enhancing model interpretability

Designing creative prompts for entertainment

Influencing the output of language models

Reducing the model's accuracy

Choose the correct answer

In prompt design, what is the significance of using specific keywords or phrases?

Options

They have no impact on model responses

They guide the model toward generating relevant content

They decrease the creativity of the model

They limit the vocabulary of the language model

Previous

3 **Choose the correct answer**

How can prompt engineering be employed to control the sentiment of language model outputs?

Options

Using random and ambiguous prompts

Incorporating emotionally charged keywords

Avoiding the use of prompts altogether

Increasing the model's learning rate

4 **Choose the correct answer**

What is one way prompt engineering can be used for language translation tasks?

Options

Including unrelated phrases in the prompt

Specifying the target language explicitly

Using only images instead of text prompts

Keeping prompts generic and neutral

5 Choose the correct answer

What ethical concern arises when using prompt engineering to manipulate model outputs for misinformation?

Options

Reduced computational efficiency

Enhanced model creativity

Potential spread of misinformation

Improved interpretability of the model

6 Choose the correct answer

How can prompt engineering contribute to mitigating ethical concerns in language models?

Options

By intentionally introducing biases in prompts

By promoting open-ended and unstructured prompts

By avoiding prompt engineering altogether

By using only pre-defined prompts

7 Choose the correct answer

What is the purpose of Prompt Base in prompt engineering?

Options

To provide a fixed set of prompts for all language models

To create a foundation for generating diverse prompts

To limit the variety of prompts available

To restrict prompt creativity

8 Choose the correct answer

How does Flowise contribute to effective prompt engineering?

Options

By restricting the use of specific keywords

By providing a structured flow to prompts

By eliminating the need for prompts altogether

By decreasing the model's learning rate

9 **Choose the correct answer**

What is a key consideration when designing your own language model (LLM) application?

Options

Maximizing model unpredictability

Minimizing user input

Aligning the application with user needs

Ignoring user feedback

10 **Choose the correct answer**

How can user feedback be valuable in improving the functionality of an LLM application?

Options

By disregarding user suggestions

By limiting the user's interaction with the application

By incorporating user suggestions for enhancements

By avoiding any updates based on user input