



In which application might VAEs be used to enhance image quality?



- ☐ Social media photo filters
- ☒ Medical imaging✓
- ☐ Text generation
- ☐ Video streaming
- ☐ None of the given options

The correct answer is: Medical imaging

Question 5

1.00/1.00

What do VAEs use to generate a distribution over latent variables?

- ☐ Backpropagation
- ☐ None of the given options
- ☐ Transfer learning
- ☒ Variational inference✓
- ☐ Gradient descent

The correct answer is: Variational inference

Question 6

1.00/1.00

Which optimization technique is commonly used with VAEs?

- ☒ Stochastic gradient descent (SGD)✓
- ☐ None of the given options
- ☐ Simulated annealing
- ☐ Genetic algorithms
- ☐ Principal component analysis

The correct answer is: Stochastic gradient descent (SGD)

Question 7

1.00/1.00

Which of the following is NOT a typical use case for VAEs?

- ☒ Real-time speech translation✓
- ☐ Face generation for video games
- ☐ Medical imaging enhancement
- ☐ Fashion design
- ☐ Anomaly detection in industrial equipment

The correct answer is: Real-time speech translation



Question 8

1.00/1.00

Which of the following is a key component of the VAE loss function?

- ☒ KL divergence✓
- ☐ Precision
- ☐ Cross-entropy only
- ☐ Accuracy
- ☐ Mean squared error only

The correct answer is: KL divergence

Question 9

1.00/1.00

Why is variational inference used in VAEs?

- ☐ To speed up training
- ☐ To reduce model size
- ☐ To improve model accuracy
- ☒ To approximate intractable posterior distributions✓
- ☐ None of the given options

The correct answer is: To approximate intractable posterior distributions

Question 10

1.00/1.00

Autoencoders primarily focus on which aspect of data?

- ☐ Clustering
- ☒ Reconstruction✓
- ☐ Generation
- ☐ Classification
- ☐ Filtering

The correct answer is: Reconstruction