

Artificial Intelligence in Data Science

Final exam topics 2026

1. **Neural Network Fundamentals, and Image models:** Perceptron, Activation functions, Backpropagation, Convolutional neural networks, Pooling, Loss functions, Regularization, Data augmentation, Diffusion models
2. **Sequence and Text Modeling:** Temporal data in neural networks, LSTM and recurrent models, Text models, Word2Vec embeddings, Attention mechanisms
3. **Other learning methods:** Reinforcement learning, Q-learning, Genetic algorithms, Pre-trained networks, Autoencodes, Unsupervised learning