Artificial Intelligence and Machine Learning

Introduction to Artificial Intelligence (AI), Search: Graph based search, heuristic search, adversarial search, Knowledge representation and reasoning, Probabilistic inferences, Introduction to python programming language, Keras and Tensorflow.
Introduction to Machine learning (ML), Applications of ML: classification, regression.
Artificial Neural Networks: Feed-forward networks, backpropagation, Optimization and regularization,
Deep learning.
Convolutional neural networks (CNNs), CNN Architectures, Encoder decoder models for image segmentation, CNN models for Object detection and related problems
Sequence models: Recurrent neural networks, LSTM and GRU, Attention mechanism, Applications of RNN in NLP.
Recent Trends in Deep Learning, Explainable AI, Vision Transformer