**🔶 No-Code & Low-Code ML Platforms**

1. Orange Data Mining – Introduction
2. Orange Widgets Overview
3. Orange Classification Models
4. Orange Clustering Techniques
5. Orange Data Preprocessing
6. AutoML Concepts
7. Teachable Machine by Google
8. ML with KNIME
9. Microsoft Azure ML Studio
10. Google Cloud AutoML

**🤖 Machine Learning Basics**

1. Types of Machine Learning
2. Supervised Learning
3. Unsupervised Learning
4. Reinforcement Learning
5. Semi-supervised Learning
6. Overfitting and Underfitting
7. Bias-Variance Tradeoff
8. Cross Validation
9. Feature Engineering
10. Model Evaluation Metrics

**📊 Data Science & Statistics**

1. Descriptive Statistics
2. Probability Distributions
3. Bayes Theorem
4. Hypothesis Testing
5. Central Limit Theorem
6. Data Cleaning
7. EDA – Exploratory Data Analysis
8. Correlation vs Causation
9. Missing Value Treatment
10. Outlier Detection

**🧠 Supervised Learning Algorithms**

1. Linear Regression
2. Logistic Regression
3. Decision Trees
4. Random Forest
5. K-Nearest Neighbors (KNN)
6. Naive Bayes
7. Support Vector Machine (SVM)
8. Gradient Boosting
9. XGBoost
10. LightGBM

**🎯 Unsupervised Learning Algorithms**

1. K-Means Clustering
2. Hierarchical Clustering
3. DBSCAN
4. PCA – Principal Component Analysis
5. t-SNE
6. UMAP
7. Anomaly Detection
8. Association Rules (Apriori)
9. Gaussian Mixture Models
10. Latent Dirichlet Allocation (LDA)

**🔢 Mathematics for ML**

1. Linear Algebra Basics
2. Matrix Multiplication
3. Vector Spaces
4. Eigenvalues & Eigenvectors
5. Calculus – Derivatives
6. Chain Rule in Backpropagation
7. Probability Theory
8. Combinatorics
9. Entropy & Information Gain
10. Optimization Techniques (Gradient Descent)

**🧮 Deep Learning Essentials**

1. Perceptron
2. Activation Functions
3. Feedforward Neural Networks
4. Backpropagation
5. Loss Functions
6. Convolutional Neural Networks (CNN)
7. Recurrent Neural Networks (RNN)
8. LSTM and GRU
9. Batch Normalization
10. Dropout Regularization

**🔍 Computer Vision**

1. Image Classification
2. Object Detection
3. Image Segmentation
4. YOLO (You Only Look Once)
5. YOLOv4 and YOLOv5
6. SSD – Single Shot Detector
7. RCNN & Fast RCNN
8. OpenCV Basics
9. Image Preprocessing
10. Image Augmentation

**🧰 TensorFlow & PyTorch**

1. TensorFlow Basics
2. Tensor Operations
3. TensorFlow Keras API
4. Building CNN with TensorFlow
5. TensorBoard for Visualization
6. PyTorch Basics
7. PyTorch Autograd
8. Model Training Loop in PyTorch
9. GPU Training
10. Transfer Learning

**📖 Natural Language Processing (NLP)**

1. Text Preprocessing (Tokenization, Lemmatization)
2. Bag of Words
3. TF-IDF
4. Word Embeddings – Word2Vec
5. GloVe
6. Transformers Architecture
7. BERT
8. GPT (Generative Pre-trained Transformer)
9. Sentiment Analysis
10. Named Entity Recognition

**🌐 Generative AI & LLMs**

1. What is Generative AI
2. LLM Architecture
3. Prompt Engineering
4. Text Generation
5. Fine-tuning LLMs
6. GPT-3, GPT-4
7. LLaMA, LLaMA 2, LLaMA 3
8. Claude & Gemini
9. Tokenization in LLMs
10. Zero-shot & Few-shot Learning

**🔗 LangChain & RAG**

1. Introduction to LangChain
2. Chains and Agents
3. Vector Stores
4. LangChain with OpenAI API
5. RAG – Retrieval-Augmented Generation
6. Building QA Systems with RAG
7. LangChain with Pinecone
8. LangChain with ChromaDB
9. Memory in LangChain
10. Output Parsers in LangChain

**📦 MLOps & Deployment**

1. What is MLOps
2. Model Lifecycle
3. Model Versioning
4. GitHub for ML Projects
5. DVC – Data Version Control
6. MLFlow
7. Continuous Training Pipelines
8. Docker for ML
9. FastAPI for Deployment
10. Streamlit for UI

**🎨 Multimedia AI Tools**

1. Adobe Firefly for Image Gen
2. Runway ML for Video Gen
3. Gen-1 to Gen-3 Models in Runway
4. Sound Generation with AI
5. Text-to-Image Generation
6. Text-to-Video Generation
7. Image Inpainting
8. Stable Diffusion
9. DeepFakes
10. AI for Music Generation

**🔄 Tools & Ecosystem**

1. Colab for ML Training
2. Jupyter Notebook
3. HuggingFace Transformers
4. OpenAI API Usage
5. Gradio for Demos
6. Streamlit Sharing
7. Google Cloud AI
8. AWS SageMaker
9. DataRobot
10. DeepSeek AI Chat