

# NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Computer Science and Engineering - NOC:Introduction to Large Language Models (LLMs)

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Co-ordinating Institute - IIT - Delhi

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Introduction and Recent Advances
- Lecture 2 - Introduction to Natural Language Processing
- Lecture 3 - Introduction to Statistical Language Models
- Lecture 4 - Statistical LM: Advanced Smoothing and Evaluation
- Lecture 5 - Introduction to Deep Learning
- Lecture 6 - Introduction to PyTorch
- Lecture 7 - Word Representation: Word2Vec and fastText
- Lecture 8 - Word Representation: GloVe
- Lecture 9 - Tokenization Strategies
- Lecture 10 - Neural Language Models: CNN and RNN
- Lecture 11 - Neural Language Models: LSTM and GRU
- Lecture 12 - Sequence-to-Sequence Models
- Lecture 13 - Decoding Strategies
- Lecture 14 - Attention in Sequence-to-Sequence Models
- Lecture 15 - Introduction to Transformer: Self and Multi-Head Attention
- Lecture 16 - Introduction to Transformer: Positional Encoding and Layer Normalization
- Lecture 17 - Implementation of Transformer using PyTorch
- Lecture 18 - Pre-Training Strategies: ELMo, BERT
- Lecture 19 - Pre-Training Strategies: Encoder-decoder and Decoder-only Models
- Lecture 20 - Introduction to Hugging Face
- Lecture 21 - Instruction Tuning
- Lecture 22 - Prompt-based Learning
- Lecture 23 - Advanced Prompting and Prompt Sensitivity
- Lecture 24 - Alignment of Language Models - I
- Lecture 25 - Alignment of Language Models - II
- Lecture 26 - Knowledge and Retrieval: Knowledge Graph
- Lecture 27 - Knowledge and Retrieval: Knowledge Graph Completion and Evaluation
- Lecture 28 - Knowledge and Retrieval: Translation and Rotation Models
- Lecture 29 - Parameter Efficient Fine-Tuning (PEFT)

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## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

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- Lecture 30 - Quantization, Pruning and Distillation
- Lecture 31 - An Alternate Formulation of Transformers: Residual Stream Perspective
- Lecture 32 - Interpretability Techniques
- Lecture 33 - Knowledge and Retrieval: Multiplicative models
- Lecture 34 - Knowledge and Retrieval: Modeling Hierarchies
- Lecture 35 - Knowledge and Retrieval: Temporal Knowledge Graphs
- Lecture 36 - Responsible LLMs
- Lecture 37 - Conclusion: Expert Panel Discussion