

Lecture 1: A Revision of Transformers

Key-Value Multi-Head Attention, Transformer Architecture, Generation Techniques, Teacher Forcing

Lecture 2: Large Language Models

Pre-Training Objectives, Instruction Fine-Tuning, Alignment, RLHF

Lecture 3: Retrieval Augmentation in Large Language Models

Hallucinations, Dense Retrieval, Realm, RAG

Lecture 4: Reasoning with Large Language Models

CoT Prompting. ToT Prompting. Program-aided Language Models. SAT-LM. AlphaGeometry. FunSearch.

Lecture 5: My Experiments with LLMs

Reasoning Benchmarks. Calibration. Unanswerability. Supervised Learning and Transfer Learning with GPT4. Optimizing LLM-based workflows.