

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

NPTEL Video Course - Computer Science and Engineering - NOC:Artificial Intelligence: Knowledge Representation

Subject Co-ordinator - Prof. Deepak Khemani

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Introduction
- Lecture 2 - Abductive Inferences and Expectations
- Lecture 3 - On Machine Learning
- Lecture 4 - A New Test of Intelligence?
- Lecture 5 - The World According to Us
- Lecture 6 - From Particles to Concepts
- Lecture 7 - The Domains for Reasoning
- Lecture 8 - Hierarchies in Representation
- Lecture 9 - Logic and Representation: A Quick Tour
- Lecture 10 - Symbols and Thought
- Lecture 11 - From Gears to Symbols
- Lecture 12 - Truth, Logic, and Provability
- Lecture 13 - A Syntactic Machine
- Lecture 14 - Entailment and Proof
- Lecture 15 - The Languages of Logic
- Lecture 16 - Patterns in Arguments
- Lecture 17 - Rules of Inference
- Lecture 18 - Propositional Logic
- Lecture 19 - Propositional Logic: Syntax
- Lecture 20 - Propositional Logic: Semantics
- Lecture 21 - Proofs: Natural Deduction
- Lecture 22 - The Deduction Theorem
- Lecture 23 - Models
- Lecture 24 - The Tableau Method
- Lecture 25 - First Order Logic
- Lecture 26 - First Order Logic: Syntax
- Lecture 27 - FOL: Universal Instantiation
- Lecture 28 - First Order Logic: Semantics
- Lecture 29 - FOL: Truth Assignments

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- Lecture 30 - Modified Modus Ponens
- Lecture 31 - The Unification Algorithm
- Lecture 32 - Skolemization
- Lecture 33 - Expert Systems
- Lecture 34 - Backward Chaining Systems
- Lecture 35 - Deductive Retrieval
- Lecture 36 - The Resolution Refutation Method
- Lecture 37 - Clause Form in FOL
- Lecture 38 - Resolution Refutation in FOL
- Lecture 39 - First Order Logic with Equality
- Lecture 40 - Who was the surgeon?
- Lecture 41 - Consistency vs. Completeness
- Lecture 42 - Logic Programming
- Lecture 43 - Arithmetic
- Lecture 44 - Horn Clauses and Prolog
- Lecture 45 - SLD Derivation = Backward Chaining
- Lecture 46 - Programming in Logic
- Lecture 47 - Prolog: Programming in Logic
- Lecture 48 - Prolog: Procedural Interpretation
- Lecture 49 - Prolog: Query Evaluation
- Lecture 50 - Prolog: Unifying Terms
- Lecture 51 - Prolog: Goal Order
- Lecture 52 - Prolog: Tabling
- Lecture 53 - Prolog: Negation by Failure
- Lecture 54 - Prolog: The Cut Operator
- Lecture 55 - Rule Based Expert Systems
- Lecture 56 - The OPS5 Language
- Lecture 57 - Match, Resolve, Execute
- Lecture 58 - Conflict Resolution Strategies
- Lecture 59 - The Rete Algorithm
- Lecture 60 - The Rete Net
- Lecture 61 - The Rete Net : Examples
- Lecture 62 - Knowledge Representation
- Lecture 63 - Synonyms, Antonyms, Hyponyms, Meronyms
- Lecture 64 - Binary Relations
- Lecture 65 - Describing Family Relations
- Lecture 66 - Recursive Descriptions
- Lecture 67 - Abstract Entities
- Lecture 68 - Reification: Units of Measurement

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- Lecture 69 - Semantic Nets and Knowledge Graphs
- Lecture 70 - DL: Description Logics
- Lecture 71 - Defining New Concepts and Roles
- Lecture 72 - The Sentences in DL
- Lecture 73 - A Family of Logics
- Lecture 74 - DL: Some Examples
- Lecture 75 - ALC Tableau
- Lecture 76 - Model Checking in ALC
- Lecture 77 - ALC Tableau: Examples
- Lecture 78 - Language Independent Representation
- Lecture 79 - Conceptual Dependency Theory
- Lecture 80 - CD States
- Lecture 81 - Inferences in MARGIE
- Lecture 82 - CD: Actions
- Lecture 83 - English to CD
- Lecture 84 - Representing Complex Verbs
- Lecture 85 - Semantic Parsing of Language
- Lecture 86 - Knowledge Structures
- Lecture 87 - Scripts
- Lecture 88 - SAM: Script Applier Mechanism
- Lecture 89 - A VIP Visit
- Lecture 90 - Invoking Scripts
- Lecture 91 - Goals, Plans, and Actions
- Lecture 92 - Goal Interactions
- Lecture 93 - Explanation Driven Understanding
- Lecture 94 - Tussle Over a Bicycle
- Lecture 95 - Plan Applier Mechanism (PAM)
- Lecture 96 - Requests and Rule Instances
- Lecture 97 - Managing Rule Instances
- Lecture 98 - Knowledge Structures: Frames
- Lecture 99 - Inheritance
- Lecture 100 - A Frame System for Travel Planning
- Lecture 101 - Inheritance in Taxonomies
- Lecture 102 - Default Reasoning
- Lecture 103 - Closed World Assumption
- Lecture 104 - Circumscription
- Lecture 105 - Default Logic
- Lecture 106 - Autoepistemic Reasoning
- Lecture 107 - The Event Calculus

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- Lecture 108 - The Effects of Events
- Lecture 109 - Epistemic Logic
- Lecture 110 - Kripke Structures: Possible Worlds Semantics
- Lecture 111 - The Muddy Children Puzzle
- Lecture 112 - The Effects of Epistemic Actions
- Lecture 113 - Reasoning with Beliefs