NPTEL Video Course - Computer Science and Engineering - Logic for CS

Subject Co-ordinator - Prof. S. Arun Kumar

Co-ordinating Institute - IIT - Delhi

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


Lecture 1 - Introduction
Lecture 2 - Propositional Logic Syntax
Lecture 3 - Semantics of Propositional Logic
Lecture 4 - Logical and Algebraic Concepts
Lecture 5 - Identities and Normal forms
Lecture 6 - Tautology Checking
Lecture 7 - Propositional Unsatisfiability
Lecture 8 - Analytic Tableaux
Lecture 9 - Consistency and Completeness
Lecture 10 - The Completeness Theorem
Lecture 11 - Maximally Consistent Sets
Lecture 12 - Formal Theories
Lecture 13 - Proof Theory
Lecture 14 - Derived Rules
Lecture 15 - The Hilbert System
Lecture 16 - The Hilbert System
Lecture 17 - Introduction to Predicate Logic
Lecture 18 - The Semantic of Predicate Logic
Lecture 19 - Subsitutions
Lecture 20 - Models
Lecture 21 - Structures and Substructures
Lecture 22 - First-Order Theories
Lecture 23 - Predicate Logic
Lecture 24 - Existential Quantification
Lecture 25 - Normal Forms
Lecture 26 - Skalemization
Lecture 27 - Substitutions and Instantiations
Lecture 28 - Unification
Lecture 29 - Resolution in FOL

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Lecture 30 - More on Resolution in FOL
Lecture 31 - Resolution
Lecture 32 - Resolution and Tableaux
Lecture 33 - Completeness of Tableaux Method
Lecture 34 - Completeness of the Hilbert System
Lecture 35 - First-Order Theories
Lecture 36 - Towards Logic Programming
Lecture 37 - Verification of Imperative Programs
Lecture 38 - Verification of WHILE Programs
Lecture 39 - References
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