

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

NPTEL Video Course - Mathematics - NOC:Approximate Reasoning using Fuzzy Set Theory

Subject Co-ordinator - Prof. Balasubramaniam Jayaram

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Flow of the Course: A not-so-sneak peek
- Lecture 2 - Fuzzy Sets - The Necessity
- Lecture 3 - Fuzzy Sets - Representations
- Lecture 4 - Fuzziness vs Probability
- Lecture 5 - Fuzzy Sets - Some Important Notions
- Lecture 6 - Operations on Fuzzy Sets
- Lecture 7 - Posets on Fuzzy Sets
- Lecture 8 - Lattice of Fuzzy Sets
- Lecture 9 - Boolean Algebra of Sets
- Lecture 10 - Algebras on Fuzzy Sets
- Lecture 11 - Triangular Norms
- Lecture 12 - Triangular Norms: Analytical Aspects
- Lecture 13 - Triangular Norms: Algebraic Aspects
- Lecture 14 - T-Norms: Construction and Representations
- Lecture 15 - T-Norms:Complementation and Duality
- Lecture 16 - Fuzzy Implications
- Lecture 17 - Fuzzy Implications - Desirable Properties
- Lecture 18 - Construction of Fuzzy Implication - I
- Lecture 19 - Construction of Fuzzy Implication - II
- Lecture 20 - Construction of Fuzzy Implication - II
- Lecture 21 - Construction of Fuzzy Implication - III
- Lecture 22 - Construction of Fuzzy Implication - IV
- Lecture 23 - (N, T, I)- An Organic Relationship
- Lecture 24 - Fuzzy Relations
- Lecture 25 - Composition of Fuzzy Relations
- Lecture 26 - Similarity and Compatibility Classes
- Lecture 27 - On the Transitivity of Fuzzy Relations - I
- Lecture 28 - On the Transitivity of Fuzzy Relations - II
- Lecture 29 - Fuzzy Propositions: Some Interpretations

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- Lecture 30 - Fuzzy If-Then Rules
- Lecture 31 - Fuzzy Relational Inference
- Lecture 32 - Fuzzy Relational Inference - MISO Case
- Lecture 33 - Fuzzy Relational Inference - Multiple Rules
- Lecture 34 - Fuzzy Inferencing Schemes - A Visual Illustration
- Lecture 35 - Similarity Based Reasoning
- Lecture 36 - SBR : Mamdani Fuzzy Systems
- Lecture 37 - Introduction to Building a Mamdani FIS
- Lecture 38 - Contrast Enhancement in Images: An FIS Approach
- Lecture 39 - Takagi-Sugeno-Kang Fuzzy Systems
- Lecture 40 - Fuzzy Inference Systems - Interpolativity
- Lecture 41 - Interpolativity of FRI - Single SISO Rule
- Lecture 42 - Fuzzy Relational Equations
- Lecture 43 - Interpolativity of FRI - Multiple SISO Rules
- Lecture 44 - Similarity Based Reasoning- Interpolativity
- Lecture 45 - FRI~SBR : FITA~FATI : Some Connections
- Lecture 46 - Continuous Models of FRI
- Lecture 47 - Continuous Models of CRI and BKS
- Lecture 48 - Continuous Models of SBR
- Lecture 49 - Extensionality of a Fuzzy Set
- Lecture 50 - Robustness of CRI
- Lecture 51 - Robustness of BKS
- Lecture 52 - Robustness of SBR
- Lecture 53 - Monotonicity of an FIS
- Lecture 54 - Monotonicity of an FRI
- Lecture 55 - Monotonicity of an SBR
- Lecture 56 - Functional (In)Equalities involving FLCs
- Lecture 57 - Suitability of BKS with Yager's Implications
- Lecture 58 - Law of Importation and Hierarchical CRI