

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

NPTEL Video Course - Electronics and Communication Engineering - Coding Theory

Subject Co-ordinator - Dr. Andrew Thangaraj

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Introduction to Linear Block Codes
- Lecture 2 - Properties of Linear Block Codes
- Lecture 3 - Dual of Linear Block Codes
- Lecture 4 - Minimum Distance of Codes
- Lecture 5 - Operations on Codes
- Lecture 6 - Bounds on Code Parameters
- Lecture 7 - Optimal Decoders
- Lecture 8 - Syndrome Decoder, Basics of Finite Fields
- Lecture 9 - Constructions of Finite Fields
- Lecture 10 - Computations in Finite Fields
- Lecture 11 - Codes over Finite Fields, Minimal Polynomials
- Lecture 12 - BCH Codes
- Lecture 13 - BCH and RS Codes I
- Lecture 14 - BCH and RS Codes II
- Lecture 15 - Decoding BCH Codes
- Lecture 16 - Decoding RS Codes
- Lecture 17 - Coded Modulation and Soft Decision Decoding
- Lecture 18 - Optimal Decoders for BPSK and AWGN
- Lecture 19 - Bitwise Map Decoder for BPSK over AWGN
- Lecture 20 - Bitwise Map Decoder from the Dual Code
- Lecture 21 - Simulating Coded Modulation
- Lecture 22 - Union Bound, Introduction to LDPC Codes
- Lecture 23 - LDPC Codes
- Lecture 24 - Message Passing, Density Evolution Analysis
- Lecture 25 - Thresholds of LDPC Codes
- Lecture 26 - Irregular LDPC Codes
- Lecture 27 - Optimized Irregular LDPC Codes, Soft Message Passing Decoders
- Lecture 28 - Density Evolution for Soft Message Passing Decoding of LDPC Codes
- Lecture 29 - LDPC Codes in Practice

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- Lecture 30 - Introduction to Convolutional Codes
- Lecture 31 - Viterbi Decoding of Convolutional Codes
- Lecture 32 - Union Bound, Recursive Convolutional Encoders
- Lecture 33 - Convolutional Codes in Practice
- Lecture 34 - BCJR Decoder
- Lecture 35 - BCJR & Max-Log-MAP Decoder, Introduction to Turbo Codes
- Lecture 36 - Turbo Decoder
- Lecture 37 - Turbo Codes in Practice
- Lecture 38 - Modern Codes