NOC: Error Control Coding: An Introduction to Convolutional Codes - Video course

COURSE OUTLINE

Error control coding is an indispensible part of any digital communication system. In this introductory course, we will discuss theory of convolutional codes, their encoding and decoding techniques as well as their applications in real world scenarios. We will also study how from simple codes by concatenation we can build more powerful error correcting codes. In particular, we will study in details, one such capacity approaching codes called turbo codes.

COURSE DETAIL

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<th>Week No</th>
<th>Topic</th>
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| 1       | Lecture 1: Introduction to error control coding  
          Lecture 2: Introduction to convolutional codes-I: state diagram, trellis diagram  
          Lecture 3: Introduction to convolutional codes-II: classification, realization, distance properties |
| 2       | Lecture 4: Decoding of convolutional codes-I: Viterbi algorithm  
          Lecture 5: Decoding of convolutional codes-II: BCJR algorithm |
| 3       | Lecture 6: Introduction to concatenated codes: parallel, serial  
          Lecture 7: Turbo codes: encoding, and properties |
| 4       | Lecture 8: Turbo decoding  
          Lecture 9: Convergence of turbo decoding algorithm  
          Lecture 10: Applications of convolutional codes |

References: