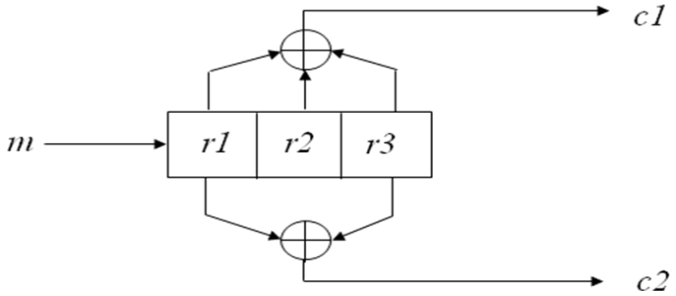
ELEG 5693 Project 3
Convolutional Encoding and Decoding

I. Objectives

1. Understand the concepts of convolutional code.
2. Understand the process of optimum convolutional decoding with the Viterbi algorithm.
3. Learn to perform convolutional encoding and decoding.

II. Requirements

1. Perform the simulation of a wireless communication system that experience flat Rayleigh fading and additive white Gaussian noise.
    a) Modulation: 8PSK
    b) Encoder: convolutional code with the encode structure given as follows



    c) Decoder: hard decoding with the Viterbi algorithm.
    d) Plot the BER v.s. Eb/N0 curve at the following Eb/N0 values: [0, 5, 10, 15, 20] dB
2. Compare the results to uncoded 8PSK modulated system with flat Rayleigh fading.
3. Please show the trellis diagram in your report.