Haar Wavelets in Image Signal Processing

Presented by: Alice Yang '21

When: Wednesday, February 15th at 7pm
Where: Park 245 or via Zoom
Zoom Info:
Meeting ID: 958 0798 2212
Password: 792030

Abstract

Haar wavelets, with their explicit form of stepwise functions producing output of 0 and 1, serve as an ideal basis for decomposing and reconstructing signals using linear combinations. In addition to the mathematical nature behind the Haar wavelets family, we will explore its application in Wavelet/Scalar Quantization Standard, a procedure used to compress and retrieve fingerprint images. In this talk, we will start with sampling a signal string example and practice three different thresholding methods in signal data compression. We will also discuss the optimization of the soft thresholding method. Eventually, by restoring the sample signal image with Haar recomposition, we will see if the optimization successfully preserves the critical attributes of the original image example while significantly reducing the size of signal string in storage.