



The Math Colloquium
Department of Mathematics
San José State University



Kenneth Hoover

CSU Stanislaus

Computerized Image Processing with the Discrete Wavelet Transform

MARCH 24, 2010, MH320

Abstract: Computerized images are often compressed using an algorithm known as Huffman encoding. The Discrete Wavelet Transform (DWT) is a pre-processing step that can be applied prior to Huffman encoding and results in a dramatic decrease in the number of bits per pixel (bpp) needed to store the image. In this presentation, we will cover the basics of Huffman encoding and explore the details of the Discrete Haar Wavelet Transform (DHWT) and its effects on the number of bpp needed to store an image. If time permits, we will also demonstrate how the DHWT can be useful in edge detection.

Background: One course in linear algebra.

About the speaker: Kenneth Hoover is an assistant professor of mathematics at California State University, Stanislaus. He completed his M.S. at SJSU in 2001 under the advisement of Donald Weddington, and his Ph.D. at the University of Oregon in 2007.

SNACKS IN MH331B AT 2:30 PM

TALK STARTS AT 3 PM

For more information, see our full schedule at:

<http://www.math.sjsu.edu/~hsu/colloq/>