

UMW Department of Mathematics Colloquium Announcement

Mathematics and its Applications to the Analysis of Digital Images

Presented by

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Abstract: Mathematics in itself is beautiful! It is also the language used to describe and understand the physical universe. In this talk we will discuss the significance and impact that mathematics has on the analysis of digital images. For example, the color images that your digital cameras produce can be modified using a variety of software applications. In fact, the cameras themselves have built-in functions that will assist the user with imperfections such as red eye, blurred images, lack of contrast, saturation, and many other problems. All of these capabilities rely on mathematical operations/functions acting on color images (three-dimensional data). In addition to discussing the nature of some of these applications, we will also describe what these functions can do for us. Some applications include discriminating a class of points in an image from the rest of the scene, detection of edges, data reduction, and why this is important.

