1116-49-2312 **Kinardi Isnata*** (isnatak@duq.edu). *A Variational Approach for High Dynamic Range Imaging (HDR).* Preliminary report.

In this talk, we present a variational approach for fusing information from a stack of image data consisting of short and long exposure images into a High Dynamic Range (HDR) image. The varying range of exposures allow for an HDR that possesses the desired visual information in all regions in the image (e.g. vibrant colors, sharp details, and a greater dynamic range of luminosity), which a regular camera cannot capture. Based on the variational approach proposed by Bertalmio and Levine (2013) for fusing an exposure bracketed image pair, we develop a method that can fuse any number of images of the same field of view. The framework is capable of attenuating spatially varying nonlinear blur, reducing noise, preserving details, and correcting color information. In addition to the ordinary HDR problems, we demonstrate how this framework can be used to fuse medical image data, such as MRI and CAT scans. (Received September 22, 2015)