

Title: Regularized image reconstruction techniques for accelerated MR imaging

Abstract: Magnetic Resonance (MR) imaging is a powerful technique to obtain high quality images of different organs inside the body non-invasively. The images can be used to identify various disease states. A major limitation in MR imaging is the long data acquisition time, even with the fastest hardware, often resulting in reduced image resolution and coverage of the organ. Many techniques have been developed to accelerate the data acquisitions by acquiring fewer data and then resolving the artifacts introduced due to undersampling. But with most of these techniques the image quality is compromised and the accelerations that can be achieved are limited.

The talk will present reconstruction techniques that can achieve high acceleration factors without significant loss in image quality. The new technique is based on temporal and spatial constraints in a regularization framework. Results are presented in the context of dynamic contrast enhanced cardiac imaging, brain imaging and breast imaging.

Bio: I received my B.E. (Hons.) in Electrical and Electronics Engineering from Birla Institute of Technology & Science (BITS), Pilani, India in 2004. I received my M.E. in Electrical and Computer Engineering from the University of Utah in 2006. I am planning to complete my PhD in Electrical Engineering in April 2008. I am currently working as a graduate research assistant at UCAIR and SCI Institutes at the University of Utah. My research is focused on medical image reconstruction using regularization techniques. I am also interested in image registration and segmentation techniques.