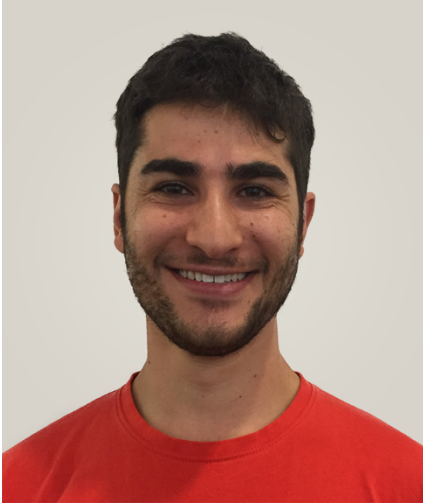


Imaging Seminar Series



Jon Tamir

UC Berkeley

Date: Monday, December 17, 2018 at 4:00 pm
Location: 36-428 (Haus)
Host: Elfar Adalsteinsson

Shuffled MRI: Accelerated, Single-Scan, Multi-Contrast Imaging

Abstract: Many clinical MRI protocols consist of several independent 2D scans at different orientations with different sequence parameters. The move to fully volumetric scans brings several benefits, e.g. reformatting and coverage, but is often inhibited by long scan times and imaging artifacts such as blurring. Here we present an accelerated MRI acquisition and reconstruction that mitigates these drawbacks. The acquisition is based on 3D fast spin-echo with varying sequence parameters. On the reconstruction side, a subspace constraint is used to recover intermediate images, and the images are combined to synthesize multiple image contrasts. We discuss the steps taken toward clinical integration at the Stanford adult and children's hospitals. Finally, we present preliminary approaches to leveraging previous clinical scans to learn new reconstructions directly from under-sampled data.

Bio: Jon Tamir, PhD is currently a research associate and formerly a PhD student at UC Berkeley, where he was advised by Prof. Miki Lustig. His research interests include computational magnetic resonance imaging, machine learning for inverse problems, and clinical translation. His PhD work focused on applying fast imaging and efficient reconstruction techniques to MRI, with the goal of enabling real clinical adoption. He is a core developer of the Berkeley Advanced Reconstruction Toolbox, available at <http://mrirecon.github.io/bart>.