



Limited Angle Reconstruction for Computed Tomography

NEW

Supervisor: Shahar Tsiper

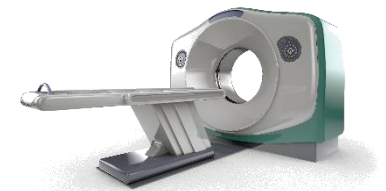
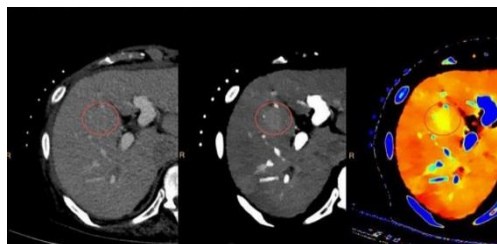
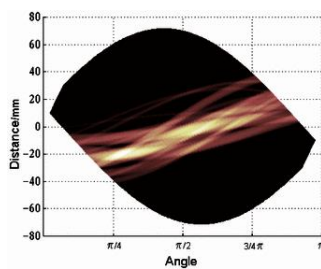
Project description:

Medical CT imaging is probably the most widely used imaging tool in-use today. In this project, we consider the problem of scanning from only a limited angle of projections (less than 180°).

Successfully reconstructing from a limited projection angle would allow us to install small CT scanners in small clinics, and maybe even on-board ambulances. However, limited angle reconstruction is a tough mathematical problem, and we will attempt to solve it using recently developed, signal processing tools.

In this project, we will learn and use sophisticated tools from signal processing, such as sub-Nyquist sampling, algebraic reconstruction techniques and new optimization based solvers.

The students will first learn on tomographic imaging, and will get familiar with the required background in advanced signal processing. We will then design and build a simulator that can reconstruct images from limited scanning angles, using the structure of the tomographic scans.



Required background: Signal and systems, Mavlas

Environment: MATLAB



GE Healthcare

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