



Reducing Metal Artifacts in CT

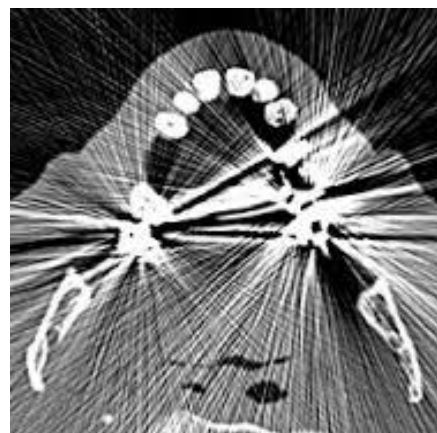
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Supervisor: Shahar Tsiper

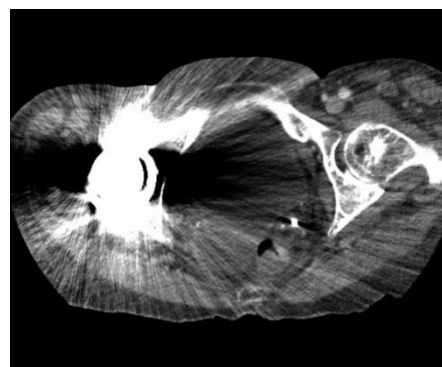
Project description:

Metal artifacts in CT scans are a major problem for radiologists today. Whenever a patient has a metallic object in his body (dental fills, platinum bolts or knife wounds for instance), the CT image gets completely ruined, as seen in the image below.

We suggest to use advanced signal processing tools, such as sparse representations, dictionary learning and others, in order to exploit the structure of the CT scans to our advantage. By smart modelling of the metal artifacts, we hope to reduce or even remove them altogether from the output scans.



Doctors from both Rambam and Ichilov hospitals have shown tremendous interest in an algorithm that can reduce these artifacts, and we will be working in collaboration with them. Our goal is to ultimately include our solution on a real CT machine, within the hospital. Real experiments can be conducted in General Electric, CT department.



In this project the students will learn state of the art methods in signal processing and sampling, and will get familiar with principles of tomography.



GE Healthcare

Required background: Signal and systems, Mavlas

Environment: MATLAB

Contact Shahar for details:

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