

Collaboration opportunity

A machine learning based algorithm to enhance CT scan images

Description

Diagnostic medical imaging is the largest contributor of artificial radiation exposure in the general population. The health system in North America follows the As Low As Reasonably Achievable (ALARA) principle with regard to radiation exposure; that is, to operate at levels as low as reasonably achievable. Unfortunately, the general tendency is to expose the patients to high level of radiation to obtain good quality CT scan images. Therefore, there is a need for advanced technologies that can enhance CT scan images without exposing the patients to high level of radiation.

Mr. Ed Boraas at Concordia University of Edmonton has developed a machine learning based algorithm that transforms low quality images obtained at low radiation exposure to high quality images. The algorithm has the capability to learn from a patient's images and thus can potentially reduce the number of scans required over time. This program has been trained using 1500 chest CT scans. Further studies to train the algorithm using a robust data set are planned.

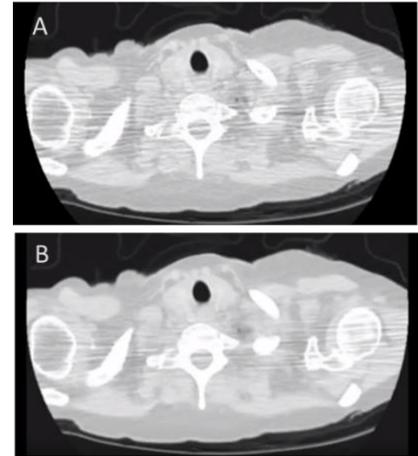


Figure 1. 2D Images obtained (A) before and (B) after processing through the radiation reduction algorithm

Potential Markets

1. CT scanner manufactures
2. Medical software developers and distributors

Advantages

This technology can

1. Potentially enhance low quality CT scan images
2. Be incorporated as a plug-in to existing infrastructure and clinical workflow for CT scanning in hospitals and clinics
3. Potentially improve workflow efficiency in hospitals by reducing the occurrence of follow-up scanning and lowering levels of radiation dose

Additional information

1. [Alberta team figures out how to make CT scans safer](#), Global News

Contact Information

For more information on this collaboration opportunity, please contact:

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