Medical Imaging

Correction of CT Images for Truncated or Incomplete Projections

View U.S. Patent No. 7,050,528 in PDF format.

WARF: P04315US

Inventors: Guang-Hong Chen

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a data consistency condition that provides improved CT images from measured projection data.

Overview

In clinical computed tomography (CT) practice, image artifacts arise when some data is missing or inconsistent, such as in the case of large patients that extend beyond the imaging field of view or patients with metallic objects, such as dental fillings, that strongly absorb X-rays. These artifacts can obscure anatomical details.

The Invention

A UW-Madison researcher has developed a data consistency condition for estimating missing or contaminated values from the fan-beam projections used in CT. The data consistency condition is used to calculate individual measurements in a missing, noisy or contaminated projection based on measurements from other, uncorrupted projections acquired during the scan. The corrupted projection data is then replaced with the estimated values and the image is reconstructed from the corrected projections.

Applications

- Imaging modalities, such as radiation therapy and PET/CT systems

Key Benefits

- Reduces artifacts caused by data that is truncated or lost due to X-ray absorption
- Provides improved CT images from measured projection data
- Can be repeatedly applied to improve results if a large proportion of the acquired data is corrupt

Additional Information

For More Information About the Inventors

- Guang-Hong Chen

Related Intellectual Property

- View Continuation-in-Part Patent in PDF format.

Tech Fields

- Medical Imaging : CT

For current licensing status, please contact Jeanine Bumanla at jeanine@warf.org or 608-960-9850