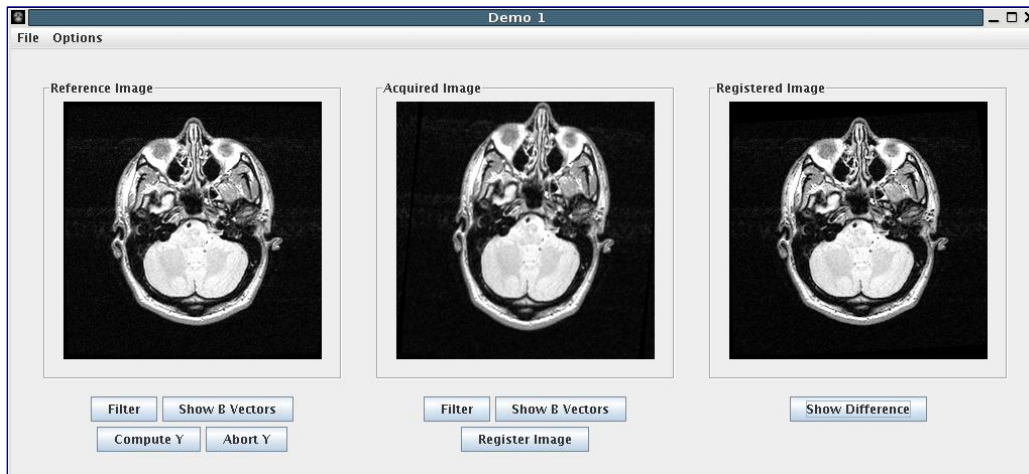




Realtime Image Registration



This technology can correct for image distortion and register sequential images to each other thereby removing motion and other artefacts.

Using a groundbreaking technique developed in astronomy, researchers at the University of Edinburgh are able to register complete 3D image volumes to sub-pixel accuracy in real-time. For the first time, full affine correction can be calculated and applied as an imaging sequence is acquired, vastly reducing both bulk subject motion and geometric artefacts from the images.

The core of the technology is a fast algorithm which is able to speed up image processing by factors of 100 to 1,000,000. This enables for the first time processing of the extensive data from detailed 3D images in real-time. It is applicable to structural MRI, functional MRI (fMRI) and other forms of medical imaging.

The method can be used to assess image quality as the scan progresses, thereby allowing radiographers to stop and re-run the scan if it is not of suitable quality. Although the registration is currently implemented on MRI data, we are confident that the method could be extended to other imaging modalities.

This technique is also applicable to accelerated drug discovery which is increasingly turning to imaging to speed up assessment of drug efficacy. Likewise there are applications in security where speed of image processing is vital.

Intellectual Property Status

This technology enjoys protection under one granted and two pending patents and is funded by an award from the Scottish Enterprise Proof of Concept Programme.

Applications

- Medical Imaging
- Fast Data fitting & Analysis
- Diagnostic Aids
- Quality control
- Drug discovery and efficacy monitoring
- Security

Key Benefits

- Allows real-time 3D registration, both rigid body and full affine
- One click graphical interface operation possible
- Enables the quality of imaging data to be assessed as the sequence is acquired, thereby allowing potential rescanning while the subject is available
- Saves time, improves throughput and utilisation
- Runs on commodity computing components
- Works with DICOM format images direct from an image server – no alterations to scanner required
- ISO9000:2001 compatible quality program in place to ease approval process

Commercial Opportunity

This technology is now available for licence within specific application areas from the University of Edinburgh.

Further Information

For further information on this technology transfer opportunity with the University of Edinburgh, please contact:

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