



TECHNOLOGY

Medical Image Registration and Applications

OVERVIEW

Hardware-accelerated image registration has been developed by Dr. Raj Shekhar's group at UMB, a novel computing solution for automatic and accurate registration (spatial alignment) of three-dimensional medical images of any modality and any anatomy. Using these innovations, the computing period for image registration is considerably shorter (minutes as opposed to hours) than currently available solutions. This technology also enables non-rigid registration for imaging deformable organs, a very important feature for real-time applications such as surgical imaging. Numerous clinical applications are envisioned and UMB holds a portfolio of patents and applications related to this technology. (Multiple Technology Dockets: RS-2006,-2007,-2008,-2010)

APPLICATIONS

- Registering images from different scanners (i.e., CT, MRI, and PET)
- Registering images taken at different times
- Improving registration of co-located scans
- Enables new modalities, such as real-time, high-quality intraoperative imaging

ADVANTAGES

- Much more rapid image registration than currently available (minutes as opposed to hours)
- Enables non-rigid image registration
- Makes feasible new real-time imaging applications

STAGE OF DEVELOPMENT

- Fully functional prototype (hardware & software).
- Further clinical development at off-site collaborating hospitals within the next year.

R&D REQUIRED

- Further clinical validation prior to regulatory approval for selected application.

LICENSING POTENTIAL

- UMB seeks partners to further enable various applications of this technology.

CONTACT INFO

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Additional Information

INSTITUTION

University of Maryland, Baltimore

PATENT STATUS

Portfolio coverage includes two issued U.S. Patents and multiple pending applications.



CATEGORIES

- Devices
- Imaging devices

INVESTIGATOR(S)

Raj Shekhar

ATTACHMENTS

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RS-2006-006