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Chapter

Ultrasound Image Dataset for Image Analysis Algorithms Evaluation

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Abstract

The use of ultrasound (US) imaging as an alternative for real-time computer assisted interventions is increasing. Growing usage of US occurs despite of US lower imaging quality compared to other techniques and its difficulty to be used with image analysis algorithms. On the other hand, it is still difficult to find sufficient data to develop and assess solutions for navigation, registration and reconstruction at medical research level. At present, manually acquired available datasets present significant usability obstacles due to their lack of control of acquisition conditions, which hinders the study and correction of algorithm design parameters. To address these limitations, we present a database of robotically acquired sequences of US images from medical phantoms, ensuring the trajectory, pose and force control of the probe. The acquired dataset is publicly available, and it is

specially useful for designing and testing registration and volume reconstruction algorithms.

Keywords

Ultrasound Dataset Registration Reconstruction Data fusion Tracking Verification Validation Evaluation Medical images

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