



Automated Image Slice Selection for Telemedicine & PACS (2006-094)

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A novel automated image selection system for use in telemedicine and picture archive applications (PACSs) has been developed by Professor Hooshang Kangarloo, Director of the UCLA Medical Imaging Informatics Group.

Purpose

Imaging studies, particularly newer imaging studies such as magnetic resonance imaging, contain large a number of slices (100-500) that are difficult to transmit from one point to another and also difficult to detect the most relevant image slice by the overwhelming majority of users. What is needed is a system to automatically select the correct and most relevant images for transmission, especially where follow up studies are being done on a patient where the only information needed is the correct slice to compare against previous ones.

Technology

The system under development consists of four components:

- 1- An internet ready image routing system using XML
- 2- A statistical language processing module to create a corpus based NLP-guided knowledge base
- 3- Diagnostic imaging map that specifies image sequences that best depicts the region of interest (either structure containing the abnormality or confirming the normal)
- 4- Anatomic structure delineator which utilizes: a) an atlas selector which in turn uses customizable reference atlases, b) a registration module and contour generator module.

Advantages

The technology has two key advantages over competing compression-based systems:

- no loss of information
- automated selection of relevant image slices

UCLA is now speaking with commercial partners who may be interested in bringing this to market via a worldwide exclusive license.