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# 5D imaging

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**Abstract**

Five-dimensional (5D) image processing has become a major challenge within the field of medical imaging. 5D images, i.e. dynamic 3D images (4D) that are acquired at multiple times. A typical example would include dynamic cardiac CT scans and/or gated cardiac MRI acquired at 3-monthly intervals and dynamic cell growth and shape change in weekly intervals. 4D images provide research a great assistance on analysis of the deformation and motion. The pattern of this deformation and motion can be used for recognition and diagnosis when another dimension is added. Another dimension usually comes from atlas, template, historical data and etc. The correlations in $5^{th}$ dimension (e.g. the pattern of deformation for dynamic cardiac CT) can be extracted for recognition, tracking and diagnosis. The correlation in the $5^{th}$ dimension can be widely used in objects tracking and recognition using radar image, cell and sub-cell particle monitoring using microscopic image and medical diagnosis using dynamic CT or MRI.

**Biography**

Dr. Shuo Li is a research scientist and project manager working in GE Healthcare, Canada. He obtained his Ph.D. degree from Concordia University, Canada on 2006. As the scientific director, he is currently leading the Digital Imaging Group of London (http://dig.lhsc.on.ca), a highly multidisciplinary group with 25 members. He is also an adjunct research professor in Department of Medical Biophysics and Department of Medical Imaging, the Schulich School of Medicine and Dentistry, University of Western Ontario. He serves as program committee member in multiple conferences and workshops; and guest editor in two journals. His current research interest is computer aided medical image analysis and visualization.