

# Rui Xu

## Curriculum Vitae

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### Work Experience

- 2015.12-Present School of Software Technology, Dalian University of Technology, China, **Associate Professor**
- 2013.10-2015.11 Ritsumeikan Global Innovation Research Organization, Ritsumeikan University, Japan, **Senior Researcher**
- 2010.04-2013.09 Graduate School of Medicine, Yamaguchi University, Japan, **Academic Researcher**
- 2008.04-2010.03 Digital Technology Research Center Sanyo Electronic Co., Ltd., Japan, **Researcher**

### Education

- 2004.09-2007.09 **Integrated Science & Engineering**, Ritsumeikan University, Japan, **Ph.D.**
- 2001.09-2004.07 **Signal & Information Systems**, South China University of Technology, China, **M.S.**
- 1998.09-2001.07 **Electronic & Information Science**, South China University of Technology, China, **B.S.**

### Areas of Research Interest

Medical Image Processing & Analysis  
Computer-aided Diagnosis (CAD)  
Pattern Recognition  
Computer Vision

### Research Projects

- 2016.03-2017.12 "Image Processing & Analysis for Computer-Aided Diagnosis of Lungs on CT Images", **Fund of Starting Research in Dalian University of Technology**

### Selected Publications

- [1] **Rui Xu**, S. Tanaka, K. Hasegawa, W. Sheng, T. Tateyama, Y. W. Chen, S. Kido. *Transparent Visualization of Large-Scale and Complex Polygon Meshes Using a SPBR Method*. Proceeding of SIGGRAPH Asia 2015 Visualization in High Performance Computing, Article No. 9 (ACM digital library), Kobe, Japan, Nov. 2-5, 2015.

- [2] **Rui Xu**, Asuka Sugiyama, Kyoko Hasegawa, Kazuyoshi Tagawa, Satoshi Tanaka, Hiromi T. Tanaka. *Remote Transparent Visualization of Surface-Volume Fused Data to Support Network-Based Laparoscopic Surgery Simulation*. Proc. 3rd KES International Conference on Innovation in Medicine and Healthcare 2015 (KES InMed-15), Kyoto, Japan, Sep. 11-12, 2015.
- [3] Wei Zhao, **Rui Xu**, Yasushi Hirano, Rie Tachibana and Shoji Kido. *A Sparse Representation Based Method to Classify Pulmonary Patterns of Diffuse Lung Diseases*. Computational and Mathematical Methods in Medicine, 2015, Article Number UNSP 567932, 11 pages
- [4] **Rui Xu**, Shoji Kido, Kazuyoshi Suga, Yasushi Hirano, Rie Tachibana, Keiichiro Muro-matsu, Kazuki Chagawa, Satoshi Tanaka. *Texture analysis on 18F-FDG PET/CT images to differentiate malignant and benign bone and soft-tissue lesions*. Annals of Nuclear Medicine, 2014, 28(9), 926-935.
- [5] Xiangrong Zhou, **Rui Xu**, Takeshi Hara, Yasushi Hirano, Ryujiro Yokoyama, Masayuki Kanematsu, Hiroaki Hoshi, Shoji Kido, Hiroshi Fujita. *Development and evaluation of statistical shape modeling for principal inner organs on torso CT images*. Radiological Physics and Technology, 2014, 7(2), 277-283.
- [6] **Rui Xu**, Xiangrong Zhou, Yasushi Hirano, Rie Tachibana, Takeshi Hara, Shoji Kido and Hiroshi Fujita. *Particle-System Based Adaptive Sampling on Spherical Parameter Space to Improve the MDL Method for Construction of Statistical Shape Models*. Computational and Mathematical Methods in Medicine. 2013, Article ID 196259, 9 pages.
- [7] **Rui Xu**, Yasushi Hirano, Rie Tachibana, Shoji Kido. *A Bag-of-Features Approach to Classify Six Type of Pulmonary Textures on High-Resolution Computed Tomography*. IEICE Trans Information & Systems. 2013, E96-D(4), 845-855.
- [8] Wei Zhao, **Rui Xu**, Yasushi Hirano, Rie Tachibana, Shoji Kido, Narufumi Suganuma. *Classification of Pneumoconiosis on HRCT Images for Computer-aided Diagnosis*. IEICE Trans Information & Systems. 2013, E96-D(4), 836-844.
- [9] Wei Zhao, **Rui Xu**, Yasushi Hirano, Rie Tachibana and Shoji Kido. *Classification of Diffuse Lung Diseases Patterns by a Sparse Representation Based Method on HRCT Images*. 35th Annual International Conference of the IEEE EMBS, Osaka, Japan, pp.5457-5460, 2013.
- [10] **Rui Xu**, Yasushi Hirano, Rie Tachibana and Shoji Kido. *Classification of Diffuse Lung Disease Patterns on High-Resolution Computed Tomography by a Bag of Words Approach*. Proceedings of MICCAI 2011, Toronto, Canada, Part III, LNCS 6893, pp.183-190., 2011.
- [11] **Rui Xu**, Yen-Wei Chen. *Generalized N-dimensional Principal Component Analysis (GND-PCA) and Its Application on Construction of Statistical Appearance Models for Medical Volumes with Fewer Samples*. Neurocomputing, 2009, 72, 2276-2287.
- [12] **Rui Xu**, Yen-Wei Chen, Song-Yuan Tang, Shigehiro Morikawa and Yoshimasa Kurumi. *Parzen-window based normalized mutual information for medical image registration*. IEICE Trans Information & Systems, 2008, E91-D (1), 132-144.
- [13] **Rui Xu**, Yen-Wei Chen, *Appearance models for medical volumes with few samples by generalized 3D-PCA*. 14th International Conference on Neural Information Processing (ICONIP'07), Kitakyushu, Japan. LNCS 4984, pp.821-830, 2008.

- [14] **Rui Xu**, Yen-Wei Chen, Song-Yuan Tang, Shigehiro Morikawa, Hasnine Akter Haque, Yoshimasa Kurumi. *3D Non-rigid Image Registration Algorithm for MR-Guided Microwave Thermocoagulation of Liver Tumors*. Medical Imaging Technology, 2007, 25(4), 261-276.
- [15] **Rui Xu**, Yen-Wei Chen, *Wavelet-based Multiresolution Medical Image Registration Strategy Combining Mutual Information with Spatial Information*. International Journal of Innovative Computing, Information and Control, 2007, 3(2), 285-296.
- [16] **Rui Xu**, Yen-Wei Chen, Song-Yuan Tang, Shigehiro Morikawa, Yoshimasa Kurumi, *Application of Non-rigid Medical Image Registration on Open-MR based Liver Cancer Surgery*. 20th International Congress and Exhibition on Computer Assisted Radiology and Surgery (CARS'06), Osaka, Japan, 2006.

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## Book Chapters

- [1] **Rui Xu**, Yen-Wei Chen, Shigehiro Morikawa, Yoshimasa Kurumi, *3D Nonrigid image registration by parzen-window based normalized mutual information and its application on MR-guided microwave thermocoagulation of liver tumors*. The 5th chapter of the book : Biomedical Image Understanding: Methods and Applications (Joo-Hwee Lim, Sim-Heng Ong, Wei Xiong), John Wiley & Sons, Inc., 2015.

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## Awards

- 2015.04 **Doi Award in Diagnostic Imaging**, Outstanding paper published in Radiological Physics and Technology in 2014

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## Academic Services

### Academy

IEEE Member

IEICE Member

### Reviewer

IEICE Transactions on Information & Systems