School of Computer Engineering
Institute of Engineering
Suranaree University of Technology

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Paramate Horkaew

Present Position

Lecturer
School of Computer Engineering
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Suranaree University of Technology

Qualifications

Ph.D. (Computer Science)
Imperial College London,
University of London, London, United Kingdom (2004)

DIC (Diploma of Imperial College)
Imperial College London,
University of London, London, United Kingdom (2004)

B.Eng. (First Class Honours) (Telecommunication Engineering)
King Mongkut's Institute of Technology, Ladkrabang
Bangkok, Thailand (1999)

Research Fields

- Medical Image Computing
- Computational Anatomy
- Digital Geometry Processing
- Computer Vision and Graphics
- Analysis on Differentiable Manifolds

Thesis Works

Statistical Modelling of Complex Topological Shapes with Application to Cardiovascular Imaging.
Ph.D. Thesis, Imperial College London, London

Reprogrammable Digital Image Processing Card using FPGA.
B.Eng. Thesis, King Mongkut's Institute of Technology, Ladkrabang

Experience

2004-Present	Lecturer, School of Computer Engineering, Institute of Engineering, Suranaree University of Technology
2001-2002	Software Developer (Cardiovascular Magnetic Resonance – http://www.cmrtools.com), Department of Computing, Imperial College London
1997-1999	Research Assistant, Computed Tomography Laboratory, NECTEC

Journal Publications

G. Melina, P. Horkaew, M. Amrani, M.B. Rubens, M.H. Yacoub, G.Z. Yang (**2005**), Three-Dimensional In vivo Characterisation of Calcification in Native and Freestyle versus Homograft Aortic Valves (*J Thorac Cardiovasc Surg*).

S. Lee, P. Horkaew, W. Caspersz, A. Darzi, G.Z. Yang (**2005**), Assessment of Shape Variation of the Levator Ani With Optimal Scan Planning and Statistical Shape Modeling (*J CAT*).

J. Keegan, P. Horkaew, T.J. Buchanan, G.Z. Yang and D.N. Firmin (**2004**), Intra- and Inter-study Reproducibility of Coronary Artery Diameter Measurements in Magnetic Resonance Coronary Angiography, Journal of Magnetic Resonance Imaging (*J Magn Reson Imag*).

Proceedings

P. Horkaew and G.Z. Yang (**2004**), Construction of 3D Dynamic Statistical Deformable Models for Complex Topological Shapes, Proceedings of Medical Image Computing and Computer Assisted Intervention (*MICCAI*).

S. Lee, P Horkaew, A. Darzi, and G.Z. Yang (**2004**), Statistical Shape Modelling of the Levator Ani with Thickness Variation, Proceedings of Medical Image Computing and Computer Assisted Intervention (*MICCAI*).

J. Keegan, P. Horkaew, T.J. Buchanan, G.Z. Yang and D.N. Firmin (**2004**), Intra- and Inter-study Reproducibility of Coronary Artery Diameter Measurements in Magnetic Resonance Coronary Angiography, Journal of Magnetic Resonance Imaging (*J Magn Reson Imag*).

P. Horkaew, J. Keegan, D.N. Firmin and G.Z. Yang (**2003**), Reproducibility of Coronary Artery Diameter Assessments in Magnetic Resonance Coronary Angiography: Phantom Study, Department of Computing Technical Report, November.

S. Lee, P. Horkaew, A. Darzi, and G.Z. Yang (**2003**), Optimal Scan Planing with Statistical Shape Modelling of the Levator Ani, Proceedings of Medical Image Computing and Computer Assisted Intervention (*MICCAI*).

S. Lee, P. Horkaew, A. Darzi, and G.Z. Yang (**2003**), Statistical Shape Modelling of Levator Ani, Proceedings of Medical Image Understanding and Analysis (*MIUA*).

P. Horkaew and G.Z. Yang (**2003**), Optimal Deformable Surface Models for 3D Medical Image Analysis, Proceedings of Information Processing in Medical Imaging (*IPMI*).

P. Horkaew, R. Merrifield, G.Z. Yang (**2003**), Optimised Statistical Deformable Surface Models with Manifold Embedding, Proceedings of *CARS*.

P. Horkaew, R. Merrifield, G.Z. Yang (**2003**), Building Optimal Statistical Deformable Surface Models, Proceedings of *IEEE EMBS ITAB*.

P. Horkaew, C. O'Sullivan, W. Li, M. Henein and G.Z. Yang (**2002**), Assessment of Mitral Valve Dynamics with 3D Echocardiography, Proceedings of Medical Image Understanding and Analysis (*MIUA*).

P. Horkaew, G. Melina, M.B. Rubens, M.H. Yacoub and G.Z. Yang (**2002**), Serial Assessment of Postoperative Valve Calcification, Proceedings of Medical Image Understanding and Analysis (*MIUA*).

Y. Rangsanseri, P. Thitimajshima, P. Horkaew (**1999**), FPGA-Based Digital Image Processing System, Proceedings of the 8th International Symposium on Integrated Circuits, Devices & Systems.

ปรเมศวร์ ห่อแก้ว และ ยุทธพงศ์ รังสรรค์เสรี (**1999**), ระบบประมวลผลภาพดิจิตอลแบบโปรแกรมได้, การประชุมวิชาการ มหาวิทยาลัยเกษตรศาสตร์ ครั้งที่ 37, พ.ศ. 2542.

ปรเมศวร์ ห่อแก้ว, สมชาย เกรียงอารีกุล และ สุธี ผู้เจริญชนะชัย (**1997**), การจำแนกสัญญาณรบกวนออกจากข้อมูลภาพโดยพิจารณาจากขนาดของวัตถุ, การประชุมวิชาการ ทางวิศวกรรมไฟฟ้า (*EECON*) ครั้งที่ 20, พ.ศ. 2540.

Curriculum Vitae

Dr. Horkaew received his B.Eng. (1st Hons.) in Telecommunication Engineering (1999) from King Mongkut's Institute of Technology, Ladkrabang. During his undergraduate study, he was working part-time on medical informatics research at the Computed Tomography Laboratory, NECTEC (1997-99). As an RA at the institute, he was involved in both software development, notably CalScore®, and FPGA design projects. He had then continued his research, supported by the Ministry of Science, in medical image computing at the Visual Information Processing group, Imperial College London (2000-04). His Ph.D. thesis focused on an efficient and automatic method for constructing the optimal statistical deformable model for complex topological shapes with application to cardiovascular imaging. Based on the *p*-Harmonic analysis on manifolds and information theory, the resultant model is not only concise but also able to capture the intrinsic morphology of typical human hearts. As a part of his research, in collaboration with the Royal Brompton Hospital London, he also co-wrote a computer assisted diagnosis software for cardiovascular magnetic resonance images (CMRTools®), currently being clinically validated by several international research centers. He is now a lecturer at the School of Computer Engineering, Suranaree University of Technology. His main research interests include Computational Anatomy, Digital Geometry Processing, Computer Vision and Graphics, and Evolution of Harmonic Maps on Riemannian Surfaces with Applications to Nonlinear PDE.