

# MIUA 2016

Medical Image Understanding and Analysis Conference

6 - 8 July, Loughborough University, UK



## Provisional Conference Programme (to be confirmed)

### Wednesday, July 06, 2016

12:30 - 14:00	<b>Registration Opens</b>
13:00 - 14:00	<b>Buffet lunch</b>
14:00 - 15:00	Parallel Sessions:  <b>- Workshop : 2D and 3D Medical Imaging and Eye Tracking</b> Dr Peter Phillips <sup>1</sup> , Dr Yan Chen <sup>2</sup> , Dr Hossein Nevisi <sup>2</sup> , Mr Leng Dong <sup>2</sup> <sup>1</sup> University of Cumbria, Lancaster, UK <sup>2</sup> Loughborough University, Loughborough, UK  <b>- Visit to MRI Centre</b> Dr Matthew Pain, Sports Biomechanics and Motor Control Research Group, Loughborough University
15:00 - 15:30	<b>Break</b>
15:30 - 16:30	Parallel Sessions:  <b>- Workshop : 2D and 3D Medical Imaging and Eye Tracking</b> Dr Peter Phillips <sup>1</sup> , Dr Yan Chen <sup>2</sup> , Dr Hossein Nevisi <sup>2</sup> , Mr Leng Dong <sup>2</sup> <sup>1</sup> University of Cumbria, Lancaster, UK <sup>2</sup> Loughborough University, Loughborough, UK  <b>- Visit to MRI Centre</b> Dr Matthew Pain, Sports Biomechanics and Motor Control Research Group, Loughborough University
18:00	<b>Reception – Drinks &amp; Canapés</b> Hazlerigg Lawn, Loughborough University

8:30 - 9:15

**Registration**

9:15 - 9:30

**Welcome**

Prof Mark Biggs, Dean of the School of Science, Loughborough University

**Session 1: MRI**

9:30 - 9:50

**An Integrated Software Application for Non-Invasive Assessment of Local Aortic Haemodynamic Parameters**

M Florkow, J M Havana, A van Engelen, T Schneider, I Rafiq, H de Bliet, J Alastruey, R Bothar, Division of Imaging Sciences & Biomedical Engineering, St Thomas's Hospital, King's College, London, UK

9:50 - 10:10

**Texture based Classification for the Automatic Rating of the Perivascular Spaces in Brain MRI**

V Gonzalez-Castro, M del C Valdes Hernandez, P Armitage, J Wardlaw, Department of Neuroimaging Sciences, Centre for Clinical, Brain Sciences, University of Edinburgh, Edinburgh, UK

10:10 - 10:30

**Cluster Analysis of Diffusion Tensor Fields with Application to the Segmentation of the Corpus Callosum**

S Elsheikh, A Fish, R Chakrabarti, D Zhou, Brighton University, Brighton, UK

10:30 - 11:00

**Break**

**Session 2: Modeling**

11:00 - 11:20

**A Regression Model for Registering Multimodal Images**

T Deregnacourt, C Samir, A-F Lao, LIMOS CNRS, University of Clermont Auvergne, Clermont Ferrand, France

11:20 - 11:40

**Multi-point Regression Voting for Shape Model Matching**

P Bromiley, C Lindner, J Thomson, M Wrigley, M Cootes, University of Manchester, UK

11:40 - 12:00

**Automatic Generation of Synthetic Retinal Fundus Images: Vascular Network**

L Bonaldi, E Mentl, L Ballerini, A Ruggeri, E Trucco, School of Science & Engineering, Dundee University, Dundee, UK

12:00 - 13:00

**Lunch**

13:00 - 14:00

**Poster Session**

14:00 - 14:30

**Keynote Speaker**

**Challenges in Breast Cancer Screening**

Dr Jonathan James, City Hospital, Nottingham, UK

14:30 - 15:30

**Keynote Speaker**

**Computer Aided Detection with Deep Learning**

Prof. Nico Karssemeijer, Radboud University, Nijmegen, Netherlands

15:30 - 16:00	<b>Break</b>
	<b>Session 3: Computer Aided Diagnosis</b>
16:00 - 16:20	<b>An Automated Computer-aided Diagnosis System for Abdominal CT Liver Images</b> G I Sayed, A E Hassanien, G Schaefer, Faculty of Computers & Information, Cairo University, Cairo, Egypt
16:20 - 16:40	<b>A Quantitative Study of Texture Features across Different Window Sizes in Prostate T2-weighted MRI</b> A Rampun, L Wang, P Malcolm, R Zwigelaar, Department of Computer Science, Aberyswyth University, Aberyswyth, UK
16:40 - 17:00	<b>Computer-aided Classification of Liver Lesions from CT Images based on Multiple ROI</b> H Alahmer, A Ahmed, Lincoln University, Lincoln, UK
19:00	<b>Conference Dinner</b> Council Chamber, Hazlerigg Building, Loughborough University

## Friday, July 08, 2016

9:15 - 10:15	<b>Keynote Speaker</b> <b>Imaging Biomarkers for Breast Cancer</b> Dr Sue Astley, Manchester University, UK
	<b>Session 4: Digital Pathology Workshop</b>
10:15 - 10:35	<b>Bagging Tree Classifier and Texture Features for Tumor Identification in Histological Images</b> M Fernandez-Carrobles, G Bueno, I Serrano, O Deniz, TMVSE, Universidad de Castilla-La Mancha, Ciudad Real, Spain
10:35 - 10:55	<b>Incorporating Local and Global Context for Better Automated Analysis of Colorectal Cancer on Digital Pathology Slides</b> A Wright, D Magee, P Quirke, D Treanor, Section of Pathology and Tumour Biology, Leeds Institute of Cancer and Biology, University of Leeds, Leeds, UK
10:55 - 11:25	<b>Break</b>
11:25 - 11:45	<b>Cell Boundary Detection for Quantitative Studies of the Role of Tetraspanin CD82 in Cell-cell Adhesion</b> P Stroe, E Claridge, E Odinisova, School of Computer Science, University of Birmingham, Birmingham, UK
11:45 - 12:05	<b>Luminance Adaptive Biomarker Detection in Digital Pathology Images</b> J Liu, G Qiu, L Shen, University of Nottingham in China, China

12:05 - 12:25	<p><b>Persistent Homology for Fast Tumour Segmentation in Whole Slide Histology Images</b></p> <p>T Qaiser, K Sirinukunwattana, K Nakane, Y-W Tsang, D Epstein, N Rajpoot, Warwick University, Warwick, UK</p>
12:25 - 14:00	<p><b>Lunch</b></p>
	<p><b>Session 5: Multidisciplinary Approaches</b></p>
14:00 - 14:20	<p><b>Automatic Detection of Hemangioma through a Cascade of Self Organizing Map Clustering and Morphological Operations</b></p> <p>C Neghina, M Zamfir, M Ciuc, A Sultana, Department of Computer Science and Electrical Engineering, University of Sibiu, Sibiu, Romania</p>
14:20 - 14:40	<p><b>Detection, Reconstruction and Segmentation of Chronic Wounds using a Kinect v2 Sensor</b></p> <p>D Filko, R Cupec, E K Nyarko, Faculty of Electrical Engineering, University of Osijek, Croatia</p>
14:40 - 15:00	<p><b>Fetal Ultrasound Image Classification Using a Bag-of-Words Model Trained on Sonographers' Eye Movements</b></p> <p>M Ahmed, A Noble, Oxford University, Oxford, UK</p>
15:00 - 15:20	<p><b>Mammographic Ellipse Modelling for Risk Estimation</b></p> <p>G Minu, Aberyswyth University, Aberyswyth, UK</p>
15:20 - 15:40	<p><b>Spatial Relations of Mammographic Density Regions and their Association with Breast Cancer Risk</b></p> <p>M Alsheh Ali, M Garnier, K Humphreys, Karolinska Institutet, Sweden</p>
15:40 - 16:00	<p><b>Security of Multi-frame DICOM Images using an XOR Encryption Approach</b></p> <p>Q Natsheh, A G Gale, B Li, Department of Computer Science, Loughborough University, Loughborough, UK</p>
16:00	<p><b>Prize Giving and Close of Conference</b></p>

### **Hybrid Level-Sets for Vertebral Body Segmentation in Clinical Spine MRI**

G Hille, Otto-von-Guericke-Universität, Magdeburg, Germany

### **Dots Detection in HER2 Fish Images based on Alternative Colour Spaces**

T Les, T Markiewicz, M Jesiotr, W Kozłowski, Warsaw University of Technology, Warsaw, Poland

### **Active Learning for Real Time Detection of Polyps**

Q Angermann, A Histace, O Romain, ETIS, Cergy, France

### **Clinical Adoption of CAD: Exploration of the Barriers to Translation**

J Taylor, J Fenner, Sheffield University, Sheffield, UK

### **Globally Optimal Registration for Describing Joint Kinematics**

R Jia, S Mellon, P Monk, D Murray, A Noble, Oxford University, Oxford, UK

### **Image-based Registration for a Neurosurgical Robot: Comparison using Iterative Closest Point and Coherent Point Drift Algorithms**

J Cutter, I B Styles, A Leonardis, H Dehghani, PSIBS Doctoral Training Centre, Birmingham University, Birmingham, UK

### **Application of the Ordered Logic Model to Optimising Frangi Filter Parameters for Segmentation of Perivascular Spaces**

L Ballerini, R Lovreglio, M del C Valdes Hernandez, V Gonzalez Castro, E Pellegrini, I J Deary, M E Baston, J Wardlaw, Edinburgh University, Edinburgh, UK

### **Analysing Cognitive States using fMRI Data**

Pankaj Pandey, Byom Kesh Jha, Neelam Sinha, International Institute of Information Technology, Bengaluru, India

### **Fast Automated Liver Delineation from Computational Tomography Angiography**

X Ding, X Geng, C Jiang, F Tian, X Yan, H Qi, L Zhang, Y Zheng, Voxelcloud Inc, Los Angeles, USA

### **Automated Detection of Malaria Parasites on Thick Blood Smears Via Mobile Devices**

L Rosado, J M Correia da Costa, D Elias, J S Cardoso, Fraunhofer Portugal, AICOS, Porto, Portugal

### **FASTR: Using Local Structure Tensors as a Similarity Metric**

J M Sloan, K Goatman, P Siebert, Toshiba Medical Visualization Systems Europe (TMSE), Edinburgh, UK

### **Convolutional Neural Networks for Diabetic Retinopathy**

H Pratt, F Coenen, DM Broadbent, S P Harding, Y Zheng, Department of Eye and Vision Science, Institute of Ageing and Chronic Diseases, Liverpool University, Liverpool, UK

### **Eye Tracking Method Compatible with Dual-Screen Mammography Workstation**

L Dong, Y Chen, A Gale, p Phillips, Loughborough University, UK