A ONE DAY INTRODUCTION TO MACHINE LEARNING

Friday 15th February 2019, The Studio, Birmingham

INVITED SPEAKER BIOGRAPHIES

Dr Sarah Gulliford

Dr Sarah Gulliford completed her PhD Thesis entitled 'Artificial Neural Networks applied to Radiotherapy' in 2003 at the Institute of Cancer Research (ICR). After completing her Clinical Scientist HCPC registration whilst working at Ipswich Hospital, she returned to the ICR as a Post-Doc in 2006. Her principal area of research is the response of normal tissues to radiotherapy, with development of methodologies for curating and undertaking dosimetric analysis within radiotherapy clinical trials. These have included the MRC-RT01 and CHHiP prostate radiotherapy trials and the PARSPORT head and neck radiotherapy trial. Projects include representing the spatial characteristics of dose to organs at risk and accumulating dose distributions from daily imaging. Her interest in machine learning has continued throughout this time where the techniques have been incorporated to predict toxicity. Most recently she has been involved in the ICR team science Big-RT project which brought together a multidisciplinary team to combine genetic, dosimetric and clinical data to predict side effects reported in the CHHiP Trial. She has contributed two book chapters on the use of machine learning to predict outcomes from radiotherapy. Dr Gulliford has recently joined the proton beam therapy physics team at University College London Hospital.

Dr James Leighs

Software Engineer & Clinical Scientist, Scientific Computing, Imaging Physics, University Hospital Southampton NHS Foundation Trust

James is a clinical scientist working in the Scientific Computing team in Imaging Physics at UHS. He has a keen interest in extracting meaningful information from data where traditional methods have not performed well. Stemming from this, a lot of his current projects involve the automation of clinical image-processing procedures, in addition to continually improving the output of the team's computational projects. His recent and current research interests include the prediction of histopathology test results from screening images and biopsy samples, the staging of liver disease from MRI and the assessment of COPD from routine radiological imaging.

Prof Nasir Rajpoot

Professor in Computational Pathology & Head, Tissue Image Analytics (TIA) Lab, University of Warwick, UK

Honorary Scientist, UHCW NHS Trust, UK
Turing Fellow, The Alan Turing Institute, UK
Wolfson Fellow, The Royal Society, UK

Nasir Rajpoot is Professor in Computational Pathology at the Computer Science department of the University of Warwick, where he started his academic career as a Lecturer (Assistant Professor) in 2001. Prof Rajpoot is the founding Head of Tissue Image Anayltics lab (formerly known as the BioImage Analysis or BIA lab) at Warwick since 2012. In Autumn 2017, he was awarded the Wolfson Fellowship by the UK Royal Society and the Turing Fellowship by the Alan Turing Institute, the UK's national institute for data science and artificial intelligence. He also holds an Honorary Scientist position at the Department of Pathology, University Hospitals Coventry & Warwickshire NHS Trust since 2016.

Current focus of research in Prof Rajpoot's lab is on developing algorithms for the analysis of large multi-gigapixel digital pathology images, with applications to computer-assisted grading of cancer and image-based markers for prediction of cancer progression and survival. Prof Rajpoot has been active in the digital pathology community for almost a decade now, having co-chaired several meetings in the histology image analysis (HIMA) series since 2008 and served as a founding PC member of the SPIE Digital Pathology meeting since 2012. He was the General Chair of the UK Medical Image Understanding and Analysis (MIUA) conference in 2010, and the Technical Chair of the British Machine Vision Conference (BMVC) in 2007.

Prof Rajpoot is a Senior Member of IEEE and member of the ACM, the British Association of Cancer Research (BACR), the European Association of Cancer Research (EACR), and the American Society of Clinical Oncology (ASCO). He will be chairing the European Congress on Digital Pathology (ECDP) at Warwick in 2019.

Jonathan Taylor

Jonathan is a Principal Clinical Scientist at Sheffield Teaching Hospitals NHS Foundation Trust, working in both the Nuclear Medicine department and the 3D Imaging Lab. Jonathan recently completed a NIHR doctoral fellowship focusing on the use of machine learning technology for image classification in nuclear medicine. He is now involved in several projects looking to implement machine learning techniques in the clinic.

Dr David Towey

Head of Nuclear Medicine Physics, Northampton General Hospital NHS Trust

David is a clinical scientist working in nuclear medicine with a particular interest in image processing and image quality in the clinical setting. He completed his PhD at Imperial College, with the thesis title “SPECT imaging and Automatic Classification Methods in Movement Disorders”. In this he applied classical machine learning algorithms to brain imaging studies.

He is currently balancing the needs of a busy clinical department and several projects using machine learning techniques in multimodality imaging and diagnostic indices.