IPNet Digest Volume 22, Number 03 March 3, 2015

Today's Editor: Patricia (Patti) K. Lamm, Michigan State University

Today's Topics:
Registration Open: Inverse Problems Symposium 2015
Postdoc Positions: Compressive Imaging in Astronomy and Medicine
Research Associate: Image Analytics in Large-Scale Databases in Biomedicine
Postdoc: Perfusion/Diffusion MRI Modeling, MR Signal Formation
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Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

Information about IPNet:
http://www.math.msu.edu/ipnet

From: "Dolan, Kirk" <dolank@msu.edu>
Date: February 26, 2015
Subject: IPS 2015 Registration

Registration is open for Inverse Problems Symposium 2015.

Website: http://www.inverseproblems2015.org/
Conference will be held May 31-June 2, 2015, Michigan State University, East Lansing, MI.

Important dates:
- Abstract submission closes: March 18th, 2015
- Abstract acceptance notification: April 1, 2015
- Early registration closes: May 1, 2015

Contact:
Kirk Dolan, Conference Chair
Keith Woodbury, Conference Co-Chair
James Beck, Conference Honorary Chair

We look forward to seeing you in East Lansing.

Submitted by: Kirk Dolan, Associate Professor
Department of Food Science & Human Nutrition
Department of Biosystems & Agricultural Engineering
135 Trout Food Science Building, Michigan State University, E. Lansing, MI 48824
Phone: 517-353-3333 Fax: 517-353-8963

From: "Wiaux, Yves" <Y.Wiaux@hw.ac.uk>
Date: February 9, 2015
Subject: Four postdocs at BASP Edinburgh

Dear All

BASP Edinburgh currently has multiple (4) postdoc positions open on compressive imaging in astronomy and medicine [CS theory, sparse reconstruction algorithms, MR imaging (MRF...), Astro imaging (radio interferometry)].

Details on positions can be found directly from the BASP group website http://basp.eps.hw.ac.uk or on researchgate.

Please do not hesitate to disseminate

Best regards,

Dr Yves Wiaux, Assoc. Prof., BASP Director
Institute of Sensors, Signals & Systems
School of Engineering & Physical Sciences
Heriot-Watt University, Edinburgh
basp.eps.hw.ac.uk

From: Alejandro Frangi <a.frangi@sheffield.ac.uk>
Date: February 12, 2015
Subject: Research Associate in Image Analytics in Large-scale Databases

Research Associate in Image Analytics in Large-scale Databases for
Efficient Construction of Personalised Fluid Transport Multiphysics Brain Models

University of Sheffield - Department of Electronic and Electrical Engineering

This post offers an exciting opportunity to join the highly successful Centre for Computational Imaging and Simulation Technologies in Biomedicine (CISTIB) www.cistib.org within the Department of Electronic and Electrical Engineering at the University of Sheffield. CISTIB is working at the interface between different areas of computational imaging and modelling: medical image analysis, statistical shape analysis, machine learning, image-based computational physiology, and personalised virtual interventions. The Centre hosts academic members from the University of Sheffield as well as Research Fellows, Research Associates, PhD Students and Scientific Software Developers forming a cross-disciplinary team with affiliation in the Electronic and Electrical Engineering and Mechanical Engineering Departments.

The Centre has had significant recent funding success in the area of dementia via the European Commission-funded VPH-DARE@IT (www.vph-dare.eu) and the EPSRC-funded OCEAN (www.ocean-mri.org) projects. This post will be associated to the VPH-DARE@IT project. In this project and post, CISTIB seeks to develop image analysis tools to build

personalised biomechanical models of fluid transport in the brain in collaboration with other groups across Europe.

We are seeking a Research Associate who will contribute to development of methods for highly-automated and robust construction of image-based biomechanical models of the brain and its vasculature from large-scale databases of medical images. The real challenge here is to scale-up methods for image segmentation and registration so that we can transform large scale population databases of multimodal medical imagery into highly detailed numerical meshes for finite element poroelasticity brain modelling. Conventional methods are insufficient either because they are impractical to run on databases that have hundreds of multi-dimensional datasets or because they require parameter tuning or manual intervention to produce highly-accurate organ boundaries and numerical meshes. We seek to develop innovative techniques that can scale-up to work robustly and automatically in various existing large-scale databases available to the consortium.
As a member of the CISTIB team you will be responsible for planning, developing and pursuing research objectives that underpin CISTIB's research programme in computational imaging and modelling, with a particular emphasis on activities in the VPH-DARE@IT project. You will have a PhD in a relevant area of Computer Science, Electrical Engineering, Biomedical Engineering, Physics or a related discipline (or equivalent experience). You will have expertise with sufficient breadth / depth of specialist knowledge as well as knowledge of research methods and techniques to work within established research programmes and a sound understanding of the principles and practical aspects of medical imaging, medical image computing. In addition you will have a demonstrable record of publications in the area of image-based computational modelling in peer-reviewed scientific journals and/or conference proceedings.

Location: Sheffield
Salary: £29,552 to £37,394 Grade 7. Per annum
Hours: Full Time
Contract Type: Contract / Temporary
Placed on: 11th February 2015
Closes: 17th March 2015
Job Ref: UOS010217
Contract Type: Fixed term for 12 months, renewable
Faculty: Faculty of Engineering

More info and application: http://tinyurl.com/qfd8yl2

Submitted by: Prof Alejandro F Frangi, PhD FIEEE
Professor Biomedical Image Computing CISTIB Center for Computational Imaging & Simulation Technologies in Biomedicine INSIGNEO Institute of in silico Medicine
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From: Alejandro Frangi <a.frangi@sheffield.ac.uk>
Date: March 2, 2015
Subject: Postdoc in Microstructure-sensitive Perfusion/Diffusion MRI in Vascular Cognitive Impairment, CISTIB, University of Sheffield, UK

Research Associate in Microstructure-sensitive Perfusion/Diffusion MRI for Diagnosis of Vascular Cognitive Impairment

This post offers an exciting opportunity to join the highly successful Centre for Computational Imaging and Simulation Technologies in Biomedicine (CISTIB) within the Department of Electronic and Electrical Engineering at the University of Sheffield. CISTIB focuses on algorithmic and applied research in the areas of computational imaging, modelling, and simulation. CISTIB is working at the interface between different areas of computational imaging and modelling: medical image analysis, statistical shape analysis, pattern recognition, image-based computational physiology, and personalised virtual interventions. The centre hosts academic members from the University of Sheffield as well as Research Fellows, Research Associates, PhD Students, and Scientific Software Developers, forming a cross-disciplinary team.

The purpose of the Research Associate post is to support and maintain the University´s national and international reputation for excellence in research and teaching. Contribution to excellence in research will be as a member of a research team carrying out research at a similar level to that undertaken by lecturing staff and will provide substantial scope for academic judgement, originality, interpretation and presentation of results. You will work primarily on the OCEAN project, a collaborative project funded by the Engineering and Physical Sciences Research Council (EPSRC), aimed at developing methods for the diagnosis of dementia in vivo and non-invasively. More specifically, this project focusses on the use of diffusion MRI for the characterisation of microstructural and microvascular changes in brain tissue by proper modelling of the acquired signals. As well as your scientific contributions to the project, you will assist with grant administration and the writing of reports for the EPSRC. Contribution to teaching will include assistance in the presentation of seminars and may include participation in the research group´s teaching programme, yet you will maintain a research-intensive focus.

You will have a PhD degree in computer science, electrical engineering, physics or equivalent. You will have excellent research skills and capabilities and a solid track record of scientific publications in peer-reviewed international journals. You will also have strong programming experience in C/C++ and MATLAB, and experience in statistical signal processing (estimation theory). Additional experience in diffusion MRI modelling and MR signal formation would be an asset.

The post will remain open till the position is filled. Please, for further information on this post see below. If you would like to discuss further particulars or express your interest in this post, please, contact Prof Alejandro Frangi (a.frangi@sheffield.ac.uk) with a detailed CV, sample publications, a statement of interest, and a minimum of 3 personal references and their contact details.

Job Reference Number: UOS010330
Contract Type: Fixed term until 30 March 2018
Working Pattern: Full time
Faculty: Faculty of Engineering
Department: Department of Electronic and Electrical Engineering
Salary: Grade 7
Closing Date: 1st April 2015
More details and online application at: http://tinyurl.com/mn2oegh

Submitted by: Prof Alejandro F Frangi, PhD FIEEE
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From: <noreply@iopscience.org>
Date: February 2, 2015
Subject: Inverse Problems, Volume 31, Numbers 2-3, February/March 2015

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From: Liwei Ning <newsletter@aimsciences.org>
Date: February 12, 2015
Subject: New IPI vol. 9, no. 1 2015: February issue is now available online

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http://www.aimsciences.org/journals/contentsListnew.jsp?pubID=744

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