From: "Inverse Problems Network (IPNet)" <ipnet@math.msu.edu>
Subject: IPNet Digest: Volume 23, Number 11
Date: October 31, 2016 at 1:16:19 PM EDT
To: <ipnet@list.msu.edu>

IPNet Digest Volume 23, Number 11 October 31, 2016

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

Today's Topics:

Submissions for IPNet Digest:
Mail to ipnet-digest@math.msu.edu

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

From: Kyle Daun <kjdaun@uwaterloo.ca>
Subject: 9th ICIPE: Upcoming abstract deadline
Date: October 13, 2016

Dear Colleagues,

The 9th International Conference on Inverse Problems in Engineering will be held at the University of Waterloo, Canada, May 23-26 2017. Past conferences have been noteworthy for their balanced focus on theory and applications, as well as an atmosphere that encourages collaboration and interaction between mathematical theorists who develop inverse analysis tools, and engineers who use these tools to solve today’s problems.

The 9th ICIPE is in honor of Professor Graham Gladwell, FRSC, in recognition of his seminal contributions to inverse analysis. Keynote speakers include Professor Margaret Cheney, Colorado State University, and Malcolm Gladwell, best-selling author, who will be speaking in honor of his father.

The conference website is icipe17.uwaterloo.ca, and a conference flier is attached to this email. Abstracts are due on November 7th 2016. Please contact kjdaun@uwaterloo.ca if you have any questions, or need help with abstract submissions.

We are looking forward to hosting you in Waterloo!

Sincerely,

Kyle J. Daun, PhD, P. Eng.
Chair, 9th International Conference on Inverse Problems in Engineering
Associate Professor
Department of Mechanical and Mechatronics Engineering
University of Waterloo

From: Simon ARRIDGE <S.Arridge@cs.ucl.ac.uk>
Subject: post doc position at UCL in image reconstruction
Date: October 31, 2016

We have a position available for a postdoc working on inverse problems in image reconstruction.
In particular we are developing compressed-sensing techniques for photoacoustic data acquired from in-vivo probes during fetal surgery. The candidate will develop techniques which advance both theory and practical implementations. Candidates should have a PhD (or will shortly be assessed for a PhD level qualification) in medical image computing, inverse problems, or a comparable subject.

Some details are available here
    http://tinyurl.com/j3pxyte

Or contact Professor Simon Arridge, simon.arridge@ucl.ac.uk for an informal discussion

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From: "Inverse Problems Network (IPNet)" <ipnet@math.msu.edu>
Subject: Faculty position in Inverse Problems and Imaging
Date: October 31, 2016

The Department of Computational Mathematics, Science and Engineering (CMSE), a newly created department at Michigan State University, invites applications from outstanding candidates for a tenure-system open-rank faculty position in the broad area of Inverse Problems and Imaging. The anticipated start date is August 16, 2017. In service to the Global Impact Initiative, the Department of CMSE will be hiring eight faculty in computational and data science over the next two years, with the goal of growing the department to roughly 30 faculty.

Exceptional candidates from all areas of inverse problem and imaging will be considered with particular attention to algorithm and theory developments for applications in medical imaging, geoscience, remote sensing, and other related inversion and imaging problems. Research within CMSE will focus on the synergy between algorithms for computational modeling and data science in applications by the creation of joint positions in physical, biological, and engineering departments with tenure home in CMSE.

The department is developing an innovative graduate and undergraduate curriculum in algorithm development, massively parallel and heterogeneous computing, and the use of

computational tools in problem solving. Applicants are required to have a Ph.D. in either Mathematics, Geoscience, Biomedical Engineering or other computational related fields. Faculty in CMSE are expected to develop a world-leading research program, mentor graduate students and participate in the development and implementation of the new computational and data science curriculum.

Online application is required via MSU's online job application website: https://jobs.msu.edu. Apply to Position #4100. Applications should include a cover letter, CV, statement of research plans, and a one-page teaching statement, all in a single PDF file. In addition, three letters of recommendation should be submitted electronically through this application system. Applications received by November 14, 2016 will receive full consideration, but the search will continue until the positions are filled. Questions regarding the position may be directed to Professor Jianliang Qian (jqian@msu.edu), Chair of the Search Committee.

Michigan State University has been advancing knowledge for more than 160 years. A member of the Association of American Universities, MSU is a research-intensive institution with 17 degree-granting colleges. MSU is an affirmative action, equal opportunity employer and is committed to achieving excellence through cultural diversity. The University actively encourages applications and/or nominations of women, persons of color, veterans and persons with disabilities. Also, we endeavor to facilitate employment assistance to spouses or partners of candidates for faculty and academic staff positions.

From: "pike, roy" <roy.pike@kcl.ac.uk>
Subject: New inverse problems book
Date: October 6, 2016

New book: The Limits of Resolution
Authors: Geoffrey de Villiers, E. Roy Pike
Website:
https://www.crcpress.com/The-Limits-of-Resolution/de-Villiers-Pike/p/book/9781498758116

Features:

- Provides a coherent introduction to the topic of resolution in the physical sciences, using many examples and basic ideas to facilitate comprehension.
- Developed from lectures and appropriate for both research and teaching purposes.
- Covers such important and timely topics as super-resolution through sparsity and statistical methods for solving linear inverse problems.
- Emphasizes the parallels between communication theory and optical imaging
- Discusses applications in various areas such as optical microscopy, tomography, diffractive imaging, light scattering, and photon correlation spectroscopy.

Summary:

"This beautiful book can be read as a novel presenting carefully our quest to get more and more information from our observations and measurements. Its authors are particularly good at relating it." --Pierre C. Sabatier

"This is a unique text - a labor of love pulling together for the first time the remarkably large array of mathematical and statistical techniques used for analysis of resolution in many systems of importance today – optical, acoustical, radar, etc…. I believe it will find widespread use and value." --Dr. Robert G.W. Brown, Chief Executive Officer, American Institute of Physics

"The mix of physics and mathematics is a unique feature of this book which can be basic not only for PhD students but also for researchers in the area of computational imaging." --Mario Bertero, Professor, University of Geneva

"a tour-de-force covering aspects of history, mathematical theory and practical applications. The authors provide a penetrating insight into the often confused topic of resolution and in doing offer a unifying approach to the subject that is applicable not only to traditional optical systems but also modern day, computer-based systems such as radar and RF communications." --Prof. Ian Proudler, Loughborough University

"a ‘must have’ for anyone interested in imaging and the spatial resolution of images. This book provides detailed and very readable account of resolution in imaging and organizes the recent history of the subject in excellent fashion.… I strongly recommend it." --Michael A. Fiddy, Professor, University of North Carolina at Charlotte

This book brings together the concept of resolution, which limits what we can determine about our physical world, with the theory of linear inverse problems, emphasizing practical applications. The book focuses on methods for solving illposed problems that do not have unique stable solutions. After introducing basic concepts, the contents address problems with "continuous" data in detail before turning to cases of discrete data sets. As one of the unifying principles of the text, the authors explain how non-uniqueness is a feature of measurement problems in science where precision and resolution is essentially always limited by some kind of noise.

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