

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

Today's Topics:

PhD & Postdoc Positions: Uncertainty Quantification for Inverse Problems, DTU
Asst/Assoc Prof: Appl & Numerical Analysis, including Inverse Problems, Imperial College

Postdoc: Computer Vision/Machine Learning, including Inverse Problems, SZU

Postdoc/PhD Position: Inverse Problems in Damage Identification, TU Braunschweig

PhD Position: Deep Learning, including Inverse Problems, TU Braunschweig

Special Issue: Advances in Computational Integral Equations (ACOM)

Table of Contents: Journal of Inverse and Ill-posed Problems

Table of Contents: Inverse Problems

Submissions for IPNet Digest:

Mail to ipnet-digest@math.msu.edu

Information about IPNet:

<http://ipnet.math.msu.edu>

From: Per Christian Hansen <pcha@dtu.dk>

Subject: PhD & Postdoc Positions, Uncertainty Quantification, DTU, Denmark

Date: Thursday, December 19, 2019

The Technical University of Denmark opens a 3-year PhD position and a 2-year postdoc position, both starting June 1, 2020 (or as soon as possible after that). The positions are part of the research project CUQI, Computational Uncertainty Quantification for Inverse Problems (<https://www.compute.dtu.dk/english/cuqi>).

These two positions deal with goal-oriented UQ where the objective is to perform UQ for a Quantity of Interest (QoI) defined on the solution to an inverse problem. Some challenges here are how to develop fast computational algorithms and how to compute the QoI directly from the data, if possible. These activities are done in collaboration with the Dept. of Mathematics, Virginia Tech, and candidates must spend some time there.

Both the PhD and the postdoc will be responsible for integrating goal-oriented UQ in a general computational platform for UQ for inverse problems. This involves a combination of theoretical considerations, development of computational methods and algorithms, and evaluation of results on selected inverse problems, e.g., sound source reconstruction, electrical impedance tomography, or image analysis.

For more details and to apply: <https://tiny.cc/CUQI-PhD-2> and <https://tiny.cc/CUQI-Postdoc-2>.

The applicants will work in a team of PhD students, postdocs and faculty members in the Section for Scientific Computing, and they must contribute with research towards the overall goals of the CUQI project. Applicants are expected to give limited contributions to teaching and training activities as well as supervision of students.

Sincerely, Per Christian Hansen, Technical University of Denmark

From: Prof. Colin Cotter colin.cotter@imperial.ac.uk [via nadigest]
Subject: Assistant/Associate Professor Position, Applied/NA, Imperial College London
Date: December 12, 2019

The Department of Mathematics at Imperial College London (UK) has a position open in Applied and Numerical Analysis targetting a Lecturer (Assistant Professor in UK-speak) or Senior Lecturer (Associate Professor in UK-speak) hire. We particularly seek applications from researchers with expertise in control theory, optimization, uncertainty quantification, inverse problems, partial differential equations, numerical analysis of PDEs, machine learning, mathematics of data science, stochastic modelling and stochastic differential equations, as well as those with a track record of interdisciplinary research in the physical and social sciences, biology, engineering, and/or Data Science.

The application deadline is 15th January 2019.

For more information and to reach the application form, please use this link:
[https://urldefense.com/v3/__https://www.imperial.ac.uk/jobs/description/NAT00620/lecturersenior-lecturer-applied-and-__;!!HXCxUKc!hP8p2cVNIMObnb6Ugk5hCxoVNygXAzt81o2TutgeXMAHujM7-dyQbaQkv304i21d\\$ numerical-analysis/](https://urldefense.com/v3/__https://www.imperial.ac.uk/jobs/description/NAT00620/lecturersenior-lecturer-applied-and-__;!!HXCxUKc!hP8p2cVNIMObnb6Ugk5hCxoVNygXAzt81o2TutgeXMAHujM7-dyQbaQkv304i21d$ numerical-analysis/)

From: J. Lu jianlu1979@163.com [via nadigest]
Subject: Postdoc Position, Computer Vision/Machine Learning, SZU
Date: December 14, 2019

Job Type: Full-Time
Duration: 2 years
Number of Position: 2 positions

Salary: about 350,000 RMB (50,000 US dollars) per year, of which 180,000 RMB per year is after tax.

Closing Date: Open Until Filled

Requirements: no more than 35 years old and PhD degree within 3 years.

Description: We have projects that are looking for Postdoc in Computer Vision, Machine Learning, Image/Video/Signal Processing/Analysis, Mathematical Imaging, Optimization, Inverse Problems, etc.

We have no teaching tasks and Check-in/Check-out policy.

Promotors:

- Prof. Jian Lu (Shenzhen Key Laboratory of Advanced Machine Learning and Applications, Shenzhen University)
- Prof. Ke Chen (University of Liverpool)
- Prof. Lixin Shen (Syracuse University)

- Prof. Yiqiu Dong (Technical University of Denmark)

Those who are interested in Research Scientist please send their C.V. to Prof. Jian Lu,
Emails: jianlu1979@163.com, jianlu@szu.edu.cn

From: Dirk Lorenz d.lorenz@tu-braunschweig.de [via nadigest]
Subject: Postdoc/PhD Position, Inverse Problems, TU Braunschweig
Date: December 12, 2019

A three year research position is available at the Institute of Analysis and Algebra at the TU Braunschweig in the group of Prof. Lorenz. The preferred starting data is March, 2020 but later start is possible.

The successful candidate will work in the project ``Model-based damage analysis'' within the Research Unit FOR3022 ``Ultrasonic Monitoring of Fibre Metal Laminates Using Integrated Sensors'' funded by the DFG. The project is concerned with the inverse problem of damage identification in fibre metal laminates by guided waves.

The position is suitable for a PhD student or a postdoc a strong background in numerical analysis is required, preferred numerical method for partial differential equations and knowledge in inverse problems is a plus.

The base salary for the position is according to 75% of the TVL E13 pay scale. A successful postdoctoral applicant will be offered an upgrade to a 100% position from other sources.

Equally qualified severely challenged persons will be given preference. The TU Braunschweig especially encourages women to apply for the position. Please send your application including CV, copies of certificates and letters of recommendation (if any) in electronic form via e-mail to Dirk Lorenz, d.lorenz@tu-braunschweig.de

Application deadline: 31.01.2020

From: Dirk Lorenz d.lorenz@tu-braunschweig.de [via nadigest]
Date: December 09, 2019
Subject: PhD Position, Deep Learning, TU Braunschweig

The group of Prof. Dirk Lorenz at the Institute of Analysis and Algebra has an open (possibly two, depending on grant approval) PhD position for a Scientific Assistant (75% TV-L EG13). The position is available from April 1, 2020 and is initially limited to three years.

The scientific focus of the group includes optimization, inverse problems, machine learning, and mathematical imaging. Besides teaching and research, the position includes work in projects or preparation of projects.

If you have a degree (Masters or Diploma) in mathematics (possibly computer science) above average, focus on optimization and/or numerical mathematics and applications, e.g. imaging or machine learning, have programming skills in MATLAB, Julia and/or Python,

have good knowledge of German and/or English, have the capacity for teamwork and independent work, we look forward to your application. If you even have experience with the training of neural networks or even graph networks, it's even better.

Equally qualified severely challenged persons will be given preference. The TU Braunschweig especially encourages women to apply for the position. Please send your application including CV, copies of certificates and letters of recommendation (if any) in electronic form via e-mail to Dirk Lorenz, d.lorenz@tu-braunschweig.de.

From: Alex Barnett abarnett@flatironinstitute.org [via nadigest]
Date: December 13, 2019
Subject: CFP, ACOM special issue on integral equations, by Aug 2020

We invite submissions for the special issue (topical collection) "Advances in Computational Integral Equations" (ACIE), in the journal Advances in Computational Mathematics (ACOM).

Integral equation methods bring tremendous advantages for the numerical solution of a wide variety of PDEs in complex geometries. In recent years there have been tremendous advances in fast (iterative and direct) solvers, representations, and quadratures; yet, many challenges remain, and the research community is active and growing. This topical collection will summarize the state of the art, and is inspired by an upcoming BIRS workshop at Oaxaca (May 31, 2020). Submissions from the global research community and the workshop are welcome, and all will undergo ACOM's usual peer-review process.

Topics of interest include: boundary integral equations; singular geometries; randomized algorithms; high frequency; inverse problems; HPC; software packages; numerical analysis; time-domain...

The guest editorial board will be: Stephanie Chaillat, Adrianna Gillman, Gunnar Martinsson, Michael O'Neil (chair), Alex Barnett, Mary-Catherine Kropinski, and Timo Betcke.

The submission deadline is: August 31, 2020.

For details:

[https://urldefense.com/v3/__https://users.flatironinstitute.org/*ahb/notes/ACOM-ACIE-SI_announce.pdf__;fg!!HXCxUKc!hP8p2cVNIM0bnb6Ugk5hCxovNygXAZt81o2TutgeXMAHujM7-dyQbaQkvy_f4G40\\$](https://urldefense.com/v3/__https://users.flatironinstitute.org/*ahb/notes/ACOM-ACIE-SI_announce.pdf__;fg!!HXCxUKc!hP8p2cVNIM0bnb6Ugk5hCxovNygXAZt81o2TutgeXMAHujM7-dyQbaQkvy_f4G40$)

From: "noreply@degruyter.com" <noreply@degruyter.com>
Subject: Contents, 'Journal of Inverse and Ill-posed Problems'
Date: Tuesday, November 26, 2019

Journal of Inverse and Ill-posed Problems December 2019 Volume 27, Issue 6
Table of Contents

Stepwise regularization method for a nonlinear Riesz-Feller space-fractional backward diffusion problem

Trong, Dang Duc / Hai, Dinh Nguyen Duy / Minh, Nguyen Dang

Inverse source problems for the Korteweg-de Vries–Burgers equation with mixed boundary conditions

Montoya, Cristhian

Quasi solution of a backward space fractional diffusion equation

Salehi Shayegan, Amir Hossein / Zakeri, Ali

On regularization of the Cauchy problem for elliptic systems in weighted Sobolev spaces

Shefer, Yulia / Shlapunov, Alexander

An inverse problem for the wave equation with source and receiver at distinct points

Vashisth, Manmohan

Optimization method in material bodies cloaking with respect to static physical fields

Alekseev, Gennady V. / Tereshko, Dmitry A.

Identification of an unknown shear force in a cantilever Euler–Bernoulli beam from measured boundary bending moment

Hasanov, Alemdar / Baysal, Onur / Itou, Hiromichi

On dynamical reconstruction of boundary and distributed inputs in a Schlögl equation

Maksimov, Vyacheslav I.

Inverse source problems for positive operators. I: Hypoelliptic diffusion and subdiffusion equations

Ruzhansky, Michael / Tokmagambetov, Niyaz / Torebek, Berikbol T.

<https://www.degruyter.com/view/j/jiip.2019.27.issue-6/issue-files/jiip.2019.27.issue-6.xml>

From: "noreply@iopscience.org" <noreply@iopscience.org>

Subject: Inverse Problems, Volume 36, Number 1, January 2020

Date: Tuesday, December 24, 2019

Inverse Problems

January 2020

Volume 36, Number 1

Table of Contents

Special Issue Papers:

The sliding Frank–Wolfe algorithm and its application to super-resolution microscopy
Quentin Denoyelle, Vincent Duval, Gabriel Peyré and Emmanuel Soubies

Preconditioning inverse problems for hyperbolic equations with applications to photoacoustic tomography

Alexander Beigl, Otmar Scherzer, Jarle Sogn and Walter Zulehner

Adaptive reconstruction for electrical impedance tomography with a piecewise constant conductivity

Bangti Jin and Yifeng Xu

Quasi-best approximation in optimization with PDE constraints

Fernando Gaspoz, Christian Kreuzer, Andreas Veese and Winnifried Wollner

Papers:

A kernel approach to deconvolution of the complex modulus in linear viscoelasticity

A R Davies and R J Douglas

A new temporal control approach for SCAO systems

Markus Pöttinger, Ronny Ramlau and Günter Auzinger

CoverBLIP: accelerated and scalable iterative matched-filtering for magnetic resonance fingerprint reconstruction

Mohammad Golbabaee, Zhouye Chen, Yves Wiaux and Mike Davies

Convergence analysis of (statistical) inverse problems under conditional stability estimates

Frank Werner and Bernd Hofmann

A Fourier approach to the inverse source problem in an absorbing and anisotropic scattering medium

Hiroshi Fujiwara, Kamran Sadiq and Alexandru Tamasan

On phase retrieval via matrix completion and the estimation of low rank PSD matrices

Marcus Carlsson and Daniele Gerosa

Synthetic aperture source localization

Chad Waddington, Margaret Cheney and James A Given

A conjugate-gradient-type rational Krylov subspace method for ill-posed problems

Volker Grimm

An entropic Landweber method for linear ill-posed problems

M Burger, E Resmerita and M Benning

<https://iopscience.iop.org/issue/0266-5611/36/1>

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