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Submissions for IPNet Digest:

Mail to ipnet-digest@math.msu.edu Information about IPNet:
https://ipnet.math.msu.edu/

From: IPNet
Sent: Monday, January 9, 2023
Subject: IMPORTANT IPNet Subscription Changes

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*** Important IPNet Subscription Changes ***
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As a reminder, the IPNet will soon be moving under the umbrella of the Inverse Problems International Association (IPIA), with initial hosting generously provided by the Finnish Inverse Problems Society (fips) and the University of Helsinki. More information may be found in the IPNet Digest mailed out on November 14, 2022.

You may receive email from Majordomo@helsinki.fi regarding these new subscription changes. Please note that subscriptions will continue to be free.
Until the transition is complete, submissions to the IPNet Digest may be sent as usual to ipnet-digest@math.msu.edu.

From: Per Christian Hansen <pcha@dtu.dk> Sent: Monday, January 2, 2023
Subject: Postdoc position, Computational UQ, Technical Univ. of Denmark

The Technical University of Denmark opens a 2-year Postdoc position starting May 2023. It is part of the research project CUQI: Computational Uncertainty Quantification for Inverse problems https://sites.dtu.dk/cuqi.

We create a platform for modeling and computations needed to apply Uncertainty quantification (UQ) to a range of inverse problems. This position focuses on the development and use of Statistical Learning as a framework for formulating and performing computational UQ.

You will be responsible for advancing the mathematical and statistical theory behind UQ for inverse problems, e.g., arising from partial differential equations. In addition, you will together with the team aim for bridging the gap between rigorous theoretical analysis and computations. You will work in a team of PhD students, postdocs, and faculty members in the CUQI project. You are expected to interact with our collaborators on applications of UQ for inverse problems.

We are looking for a profile who will also find it exciting to give limited contributions to teaching and training activities as well as supervision of students.

For more details and to apply (deadline March 1, 2023), see:
https://efzu.fa.em2.oraclecloud.com/hcmUI/CandidateExperience/en/sites/CX_1/job/1265/?utm_medium=jobshare

Per Christian Hansen and Kim Knudsen

Submitted by:
Professor Per Christian Hansen Villum Investigator
Section for Scientific Computing
DTU Compute - Technical University of Denmark Tel +45 23.65.27.98
Homepage: http://people.compute.dtu.dk/pcha/
LinkedIn: https://www.linkedin.com/in/per-christian-hansen-23bb55209/ CUQI project:
https://sites.dtu.dk/cuqi
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From: Betcke, Marta <m.betcke@ucl.ac.uk> Sent: Wednesday, January 4, 2023
Subject: PhD studentship in Deep learning for nonlinear PDE based inverse problems at UCL

We would like to bring to your attention a 4 year PhD studentship at UCL to work with Marta Betcke and Simon Arridge on "All-at-once deep learning methods for nonlinear PDE based inverse problems", see below for a more detailed project description (and a project ID needed for the application form)

https://ucl-epsrc-dtp.github.io/2023-24-project-catalogue/projects/2228bd1149.html

The application should be completed by 12 (noon) on 26th of January 2023. The instructions and links to a 3-part application form can be found below

https://www.ucl.ac.uk/epsrc-doctoral-training/prospective-students/apply-ucl-esprc-dtp-studentship

The funding is available to both UK home and international students (the number of admitted international students is capped at 30%) and it will be allocated primarily on the basis of academic merit. The candidates are welcome to contact Marta Betcke m.betcke@ucl.ac.uk for an informal discussion of the research project.

Submitted by:
Dr Marta M. Betcke Associate Professor Dept. Computer Science
University College London
90 High Holborn WC1V 6LJ London, UK Email m.betcke@ucl.ac.uk
Tel: +44 (0)20 3549 5568 (Direct Dial)

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From: Carola-Bibiane Schönlieb <cbs31@cam.ac.uk> Sent: Sunday, January 8, 2023
Subject: Deadline imminent: Submission for IMA Leslie Fox Prize 2023

The prestigious IMA Leslie Fox Prize is to be held in collaboration with The Alan Turing Institute for the first time. The outstanding, biennal prize was established in 1985 in honour of distinguished mathematician and researcher Leslie Fox. The next prize (the twenty-first) will be

awarded on the 26th of June 2023, aligning with the 29th Biennial Numerical Analysis Conference in Strathclyde.

Entries for the twenty-first IMA Leslie Fox Prize for Numerical Analysis should be submitted by 31st of January 2023 using the form on the website (link below). Any person who is less than 31 years old on 1st of January 2023 and has not already won a first prize is eligible - candidates need not come from academia.

Each entry should be based on a paper, describing some of the candidate's research, that is suitable for a 40 minute lecture at a numerical analysis meeting.

For detailed eligibility criteria and submission guidelines please check the website
https://ima.org.uk/14623/ima-fox-prize-2023-call-for-papers/

Best regards,
Carola Schönlieb

(on behalf of all members of the adjudicating committee, Jan S Hesthaven, Carola Schönlieb and Alex Townsend)
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IPNet Digest   Volume 30, Number 02 9th February, 2023

Today's Editor: Matti Lassas,   University of Helsinki Today's Topics:
OIPE 2023: Call for Papers 1
3rd Alps-Adriatic Inverse Problems Workshop 2
PhD and Postdoc positions - University of Genoa, Italy

New AIMS Journal: Applied Mathematics for Modern Challenges

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet- inverse-problems-network
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From: OIPE 2023 oipe2023@tugraz.at
Sent: 26 January 2023
Subject: OIPE 2023: Call for Papers

17th International Workshop on Optimization and Inverse Problems in Electromagnetism 2023
September, 17 - 20, 2023 | Graz, Austria

Dear colleague,
I am writing to you on behalf of the organizing committee of the 17th International Workshop on Optimization and Inverse Problems in Electromagnetism 2023 (OIPE 2023), which will be held in Graz, Austria, from September 17 to September 20, 2023. It will be organized by the Institute of Fundamentals and Theory in Electrical Engineering, Faculty of Electrical and Information Engineering of Graz University of Technology.
The aim of this workshop is to discuss and share recent developments in optimization and inverse methodologies and their applications to the design and working principle of electromagnetic devices. A special focus will be put on machine learning techniques and optimal energy management.

Please find the call for papers on the website oipe2023.tugraz.at

Additionally, after the workshop a one-day doctoral course is scheduled. International experts will teach PhD students and researchers entering the field in selected aspects.
For further details, please refer to the website or feel free to contact the organizers directly by e-Mail (oipe2023@tugraz.at).

I am looking forward to meeting you in Graz in autumn 2023.

Alice Reinbacher-Köstinger
Chair OIPE 2023
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From: Barbara Kaltenbacher Barbara.Kaltenbacher@aau.at

Sent: 2 Feb 2023
Subject: 3rd Alps-Adriatic Inverse Problems Workshop 2
Dear Colleagues,

We are organizing the "3rd Alps-Adriatic Inverse Problems Workshop" - an Inverse Problems Workshop at the Department of Mathematics of the Alpen-Adria-Universität Klagenfurt, **July 5-7, 2023**:

https://aaip2023.aau.at/

The aim of this workshop is to gather scientists working on the theory and applications of inverse problems in academia and industry, in order to present their research, exchange ideas, and start new collaborations. Scientists at an early stage of the career (PhD students, postdocs) are particularly encouraged to participate.
3rd Alps-Adriatic Inverse Problems Workshop 2023 (AAIP 2023) (5-7 July 2023): Overview · Conferences @ Universität Klagenfurt (Indico)
aaip2023.aau.at
Note that a summer school on inverse problems will be held during July 3-4, 2023:
https://aaip-summerschool-2023.aau.at
1st Alps-Adriatic Inverse Problems Summer School (3-4 July 2023): Overview · Conferences @ Universität Klagenfurt (Indico) (aau.at)
Please encourage junior researchers from your group to participate. Registration for both events is already open.
If you intend to participate, we strongly recommend to book an accommodation in Klagenfurt as soon as possible, since beginning of July coincides with beginning of summer season here, with a lot of tourists around.
Best regards,
Barbara Kaltenbacher and Elena Resmerita (on behalf of the organizers)
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From: Giovanni Alberti **Giovanni.Alberti@unige.it** **Sent:** 30 January 2023
Subject: PhD and Postdoc positions - University of Genoa, Italy

The Machine Learning Genoa Center, University of Genoa, opens one Postdoc position and one PhD position on inverse problems.

PHD. This project is focused on using methods of applied harmonic analysis, in particular compressed sensing, wavelet theory and approximation theory, and of machine learning to solve inverse problems. We shall focus on inverse problems described by integral operators, as well as those modelled by PDEs. Supervised by Giovanni S. Alberti. Start in Fall 2023.

POSTDOC. The project focuses on machine learning approaches for ill-posed inverse problems with an emphasis on infinite-dimensional problems defined by integral and partial differential equations. The goal is to develop algorithms for which rigorous guarantees can be developed both in terms of accuracy, stability and computational requirements. Supervised by Giovanni S. Alberti and Lorenzo Rosasco. Flexible start.

More details and expressions of interest (and additional PhD positions on machine learning):
https://malga.unige.it/#open-positions
Best wishes Giovanni Alberti
https://www.dima.unige.it/~alberti/

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We are pleased to announce the launch of a new AIMS journal, now accepting submissions: Applied Mathematics for Modern Challenges https://www.aimsciences.org/AMMC

Applied Mathematics for Modern Challenges (AMMC) is an interdisciplinary journal with a focus on real-world applications of applied mathematics. Articles should include mathematics applied to practical problems with supporting examples that include real-world data. Several kinds of scientific novelty are appreciated in this journal. Novelty can be achieved through offering end-users with unprecedented mathematical solutions, even with tried-and-true methods. Or, novelty can be of a more traditional sort, producing new mathematics for a problem of contemporary interest. To promote timeliness, the journal has a page limit and rapid time to publication. Inclusion of open- source data, open code, and supplementary materials is encouraged. Application areas of particular interest are physical and life sciences, including medicine, climate modeling, and
engineering. Mathematical areas of particular interest include mathematical modeling, scientific computation, dynamical systems, inverse problems, imaging science, data science, optimization, and control theory.

Best regards,
Jennifer Mueller and Samuli Siltanen

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Today's Editor: Matti Lassas   University of Helsinki Today's Topics:
Assistant or Associate Professor position in Numerical Analysis and Scientific Computing at the University of Twente
Postdoc position on DARPA-funded interdisciplinary project involving radar signal processing and tracking, Colorado State University
Postdoc position on Nonlinear Inversion in Low-Field MRI, University of Oulu
Postdoc position, computational modeling and imaging, University of Eastern Finland
Summer Schools 2023 - DLCV and ModML courses, MaLGa Machine learning Genoa center
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From: Schlottbom, Matthias (UT-EEMCS), m.schlottbom@utwente.nl
Sent: 13th February 2023
Subject: Assistant or Associate Professor position in Numerical Analysis and Scientific Computing at the University of Twente

We offer an Assistant or Associate Professor position in Numerical Analysis and Scientific Computing in the Department of Applied Mathematics at the University of Twente (UT).

Within the department, the Mathematics of Computational Science group focuses on numerical methods for (partial) differential equations and inverse problems, see also https://www.utwente.nl/en/eemcs/sacs/

The application deadline is March 25th, 2023. More information and a button to start the application process can be found at
https://utwentecareers.nl/en/vacancies/1057/assistantassociate-professor-in-numerical-analysis- and-scientific-computing/

Best regards, Matthias Schlottbom

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From: Margaret Cheney, cheney.margaret@gmail.com
sent: 14th February 2023
Subject: Postdoc position, Colorado State University
Postdoc position, Colorado State University

Colorado State University plans to hire a postdoc to work on a DARPA-funded interdisciplinary project involving radar signal processing and tracking. The preferred background for the candidate includes familiarity with wave propagation, Fourier analysis, and statistical signal processing, together with programming experience. Experience with GPUs would be ideal. The initial funding is for 15 months, with a possible 9-month extension that would focus on developing fast algorithms and GPU implementation. The expected start date is late summer of 2023.

Please contact Prof. Margaret Cheney (cheney@math.colostate.edu) and apply to one or both of the listings below:
https://jobs.colostate.edu/postings/119055   (ECE postdoc listing)

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From: Andreas Hauptmann, Andreas.Hauptmann@oulu.fi
Sent: 1st March 2023
Subject: Postdoc position at University of Oulu on Nonlinear Inversion in Low-Field MRI

The Inverse Problems Group at the University of Oulu is announcing a **Postdoctoral position on "Nonlinear Inversion in Low-Field MRI"**
Link to the announcement: https://oulunyliopisto.varbi.com/what:job/jobID:601357/
The position is located at the Research Unit of Mathematical Sciences, which has an internationally strong position at the forefront of research in its focus areas. The Inverse Problems Group within the Research Unit is a member of the Finnish Center of Excellence in Inverse Problems Research, funded by the Academy of Finland for the period 2018 – 2025.
About the project
In low-field MRI many ideal assumptions of the high-field equivalent are not fully satisfied, and hence advanced reconstruction methods are necessary to obtain satisfactory reconstructions. In this project, the candidate is expected to perform fundamental research on advanced image reconstruction techniques while taking into account the nonlinear nature of MR signal generation.
As part of the project, the candidate is expected to take part in planning and potential construction of an in-house research low-field MR within the collaborative consortium.
The project will be conducted in collaboration with Prof. Miika Nieminen at the Research Unit of Medical Imaging, Physics and Technology, University of Oulu and Assoc. Prof. Mikko Nissi and Prof. Ville Kolehmainen at the Department of Technical Physics, University of Eastern Finland.
The position is fixed-term for 2 years as and can be filled as soon as possible, but no later than 01.01.2024.

Deadline to apply is *April 14th 2023* (23:59 Finnish local time) through our recruitment system:
https://oulunyliopisto.varbi.com/what:job/jobID:601357/
If you have any further questions, please contact
Associate Professor & Academy Research Fellow Andreas Hauptmann,
Research Unit of Mathematical Sciences, University of Oulu e-mail: andreas.hauptmann@oulu.fi
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From: Tanja Tarvainen tanja.tarvainen@uef.fi
Sent: 3rd March 2023
Subject: Postdoc position in the University of Eastern Finland
A postdoc position in an ERC-CoG project of Professor Tanja Tarvainen entitled 'Quantitative Tomography Using Coupled Physics of Waves'

The project focuses on computational modelling and inverse problems of coupled physics tomography using light and ultrasound. The aim is to develop numerical approximations for equations describing light and ultrasound propagation, and computational methods for the solving the inverse problem.

More information on the position, and the application portal, are available at the following link:
https://rekry.saima.fi/certiahome/open_job_view.html?did=5600&jc=16&id=000014578&lang=fi

Best regards Tanja Tarvainen
https://uefconnect.uef.fi/en/person/tanja.tarvainen/
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From: Giovanni Alberti, Giovanni.Alberti@unige.it
Sent: 16th February 2023

Subject: MaLGa Summer Schools 2023 - DLCV and ModML
As part of the scientific activity and educational offer of MaLGa - Machine Learning Genoa Center, we are glad to announce that applications are open for the following PhD courses:

DLCV - Deep Learning and Computer Vision (course web page here), to be held **5-9 June 2023** This second edition provides a theoretical and hands-on introduction to basic principles of deep architectures, computer vision algorithms and their strong connections.
*Apply here by **April 23rd 2023***

ModML - Topics in Modern Machine Learning (course web page here) to be held **19-23 June 2023** An evolution of RegML, ModML presents advanced machine learning topics in an introductory and insightful manner, allowing participants to further dig in as they see fit.
*Apply here by **April 16th 2023***

Our schools are open to students, researchers and professionals, upon acceptance based on CV selection. The maximum number of participants for each school is 120.

Follow us on social media to stay up to date on our latest news!
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From: noreply@iopscience.org
Subject: Inverse Problems, Volume 39, Number 2, February 2023
Sent: 25th February 2023
Inverse Problems   March 2023   Volume 39 Number 3
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Free article:
Foreword to special issue of *Inverse Problems* on modern challenges in imaging Bernadette N Hahn, Eric Todd Quinto and Gaël Rigaud

Special Issue article
Stability and numerical analysis of backward problem for subdiffusion with time-dependent coefficients
Zhengqi Zhang and Zhi Zhou

Masked unbiased principles for parameter selection in variational image restoration under Poisson noise
Francesca Bevilacqua, Alessandro Lanza, Monica Pragliola and Fiorella Sgallari

Spectral decomposition of atomic structures in heterogeneous cryo-EM
Carlos Esteve-Yagüe, Willem Diepeveen, Ozan Öktem and Carola-Bibiane Schönlieb

Imaging based on Compton scattering: model uncertainty and data-driven reconstruction methods
Janek Gödeke and Gaël Rigaud

PAPERS

Discrete Calderón problem with partial data
Rodrigo Lecaros, Jaime H Ortega, Ariel Pérez and Luz De Teresa

On the exactness of the universal backprojection formula for the spherical means Radon transform

M Agranovsky and L Kunyansky

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Today's Editor: Matti Lassas   University of Helsinki Today's Topics:
Postdoctoral Fellow in Inverse Problems at UNC, Charlotte
Postdoctoral Researcher: ERC funded project in Mathematical Inverse problems
Call for bids for the AIP conference 2025
10th International Conference on Inverse Problems in Engineering, published proceedings Inverse conference
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Submissions for IPNet Digest: submit-ipnet@helsinki.fi
Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse- problems/ipnet-inverse-problems-network

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From: Taufiquar Khan, taufiquar.khan@uncc.edu
Sent: 8 March 2023
Subject: Postdoctoral Fellow in Inverse Problems at UNC, Charlotte Position Title: **Postdoctoral Fellow in Inverse Problems**

Applications are invited for a postdoctoral research position at the University of North Carolina at Charlotte. The duration of this position is a one year position with a possibility of renewal up to two additional years, subject to a budget approval. The successful candidate will work under the supervision of Professor Taufiquar Khan. The research of this candidate will be focused on implementation of AI and Deep Learning based algorithms, and providing performance guarantees for such algorithms for solving forward and inverse problems appearing in mathematical imaging. The candidate is also expected to have sufficient background on regularization of ill-posed inverse problems arising from coefficient inverse problems involving partial differential equations.

The position will begin on July 1, 2023 and the candidate will be paid $48,000, annually. Interested candidates are welcome to send their curriculum vitas, a brief (max one page) statement of research interests and one to three papers/preprints reflecting their research experience to **https://jobs.uncc.edu** (please click "Post Doc."). In addition to submitting your application electronically, please email your materials to Professor Khan's assistant, Ms. Jennifer Bagby (**jbagby1@uncc.edu**) Questions about this position may be directed to Ms. Jennifer Bagby.

Charlotte offers a dynamic space to live, work and connect for faculty, students, alumni, and staff, with its outstanding cultural, recreational, and business amenities. As the 15th largest U.S. city, Charlotte is consistently ranked one of the best cities to live (#20 by U.S. News & World Report.)

Thanks and regards,

Taufiquar R Khan, Ph.D. Professor and Chair
Department of Mathematics and Statistics
University of North Carolina (UNC) at Charlotte|Fretwell 360E 9201 University City Blvd., Charlotte, NC 28223, USA
Phone: 704-687-0635 | Fax: 704-687-1392
taufiquar.khan@uncc.edu | http://www.math.uncc.edu

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From: Lauri Oksanen, lauri.oksanen@helsinki.fi
Sent: 7 April 2023
Subject: Postdoctoral Researcher: ERC funded project in Mathematical Inverse problems

The Department of Mathematics and Statistics at the University of Helsinki invites applications for a Postdoctoral Researcher position in mathematical inverse problems at the University of Helsinki. The position will be funded by the ERC grant LoCal "Lorentzian Calderon problem: visibility and invisibility" led by Professor Lauri Oksanen.
The LoCal project will develop techniques that lie at the intersection of partial differential equations and geometry, with affinity to control theory and general relativity. A physical interpretation of the Lorentzian Calderon problem asks us to recover a moving medium given data generated by acoustic waves probing the medium, and seen from the mathematical point of view, it is the simplest formulation of an inverse boundary value problem for a linear wave equation that is expressed in a generally covariant fashion.
Position is for 2 years, with a possible extension to a 3rd year. Preferred starting time is in Fall 2023.

The starting salary of a Postdoctoral Researcher is typically 3500 - 3800 euros/month, depending on previous qualifications and experience.
The University of Helsinki offers comprehensive services to its employees, including occupational health care and health insurance, sports facilities, and opportunities for professional development. The University provides support for internationally recruited employees with their transition to work and life in Finland. For more on the University of Helsinki as an employer, please see https://www.helsinki.fi/en/about-us/careers.

Interested applicants are advised to submit their application by going to the open position application: ERC Funded Postdoc Position in Mathematical Inverse Problems (helsinki.fi) The deadline for applications is on May 12th, 2023.

For more information, please contact lauri.oksanen@helsinki.fi

Kind regards, Lauri Oksanen
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From: Kaltenbacher, Barbara, Barbara.Kaltenbacher@aau.at
Sent: 18 March 2023
Subject: Call for bids for the AIP conference 2025

The Executive Committee of the Inverse Problems International Association IPIA invites applications for the organization of the Applied Inverse Problems Conference in 2025.
Applications should include the following information:
City: In which city should AIP 2025 take place? Describe how to get there by plane!
Date: Which date or dates are planned/possible?
Organizers: Who will be responsible for the organization, who will support the main organizer(s)?
Scientific Committee: Please name members of the scientific committee. It should include at least three members of the Executive committee (EC). You may either suggest these EC members yourself or leave the selection to the EC.
Location: Which rooms are available for the plenary talks and for the parallel sessions?
Please provide their number, capacity, and distances between them! How many hotel rooms are available in the vicinity of the conference center? Are there restaurants, canteens or locations for lunch close by?
Social Program: Do you plan a conference dinner, a reception, trips to local attractions or any other activities?
Finances: Which local funds are available to support the conference? What are the costs for the reservation of lecture halls and/or hotel rooms and when are they due?
IPIA may be able to lend some money for this purpose. Please contact us if you want to use this option!

Please send your application to ipia@gwdg.de by May 31, 2023.
Letters of intent (not yet necessarily containing all the details metioned above) should be sent to ipia@gwdg.de by April 30, 2023.
For questions please do not hesitate to address us at ipia@gwdg.de

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From: Filippo De Monte, filippo.demonte@univaq.it
Sent: 15 March 2023

Subject: Proceedings Inverse Conference

10th International Conference on Inverse Problems in Engineering (ICIPE 22) that was held in Francavilla al Mare (Chieti), Italy, May 15-19, 2022.

The ICIPE22 JPCS conference proceedings volume by IOP is now published and available online for free access.
Go to: Journal of Physics: Conference Series, Volume 2444, 2023 - IOPscience

The ICIPE 22 special section by ASME Journal of Verification, Validation and Uncertainty Quantification is now published and available online.
Go to: Volume 7 Issue 4 | J. Verif. Valid. Uncert. | ASME Digital Collection

Yours sincerely,
Filippo
Filippo de Monte
ICIPE22 Conference Chair

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From: noreply@iopscience.org
Subject: Inverse Problems, Volume 39, Number 4, April 2023
Sent: 1 April 2023
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Block delayed Majorize-Minimize subspace algorithm for large scale image restoration *
Mathieu Chalvidal, Emilie Chouzenoux, Jean-Baptiste Fest and Claire Lefort 2023 *Inverse Problems* 39 044002

Vertical autofocus for the phase screen in a turbulent ionosphere
Mikhail Gilman and Semyon Tsynkov 2023 *Inverse Problems* 39 045001

Orientation estimation of cryo-EM images using projected gradient descent method
Huan Pan, Jian Lu, You-Wei Wen, Chen Xu and Tieyong Zeng 2023 *Inverse Problems* 39 045002

Stability in inverse problem of an elastic plate with a curved middle surface
Song-Ren Fu and Peng-Fei Yao 2023 *Inverse Problems* 39 045003 Inverse Problems, Volume 39, Number 4, April 2023

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Free IPI article:
[The enclosure method for the detection of variable order in fractional diffusion equations](#)
Masaru Ikehata and Yavar Kian

Special Issue IPI articles from "Special issue on analytical aspects of inverse problems in PDEs":
[Preface](#)
Katya Krupchyk, Mikko Salo, Gunther Uhlmann and Jenn-Nan Wang

[On the scientific work of Victor Isakov](#)
Katya Krupchyk, Mikko Salo, Gunther Uhlmann and Jenn-Nan Wang

[New notions and constructions of the boundary control method](#)
M. I. Belishev

[A spectral target signature for thin surfaces with higher order jump conditions](#) Fioralba Cakoni, Heejin Lee, Peter Monk and Yangwen Zhang

[Two single-measurement uniqueness results for inverse scattering problems within polyhedral geometries](#)
Xinlin Cao, Huaian Diao, Hongyu Liu and Jun Zou

[Global unique continuation from the boundary for a system of viscoelasticity with analytic coefficients and a memory term](#)
Matthias Eller, Naofumi Honda, Ching-Lung Lin and Gen Nakamura

[Microlocal analysis of borehole seismic data](#)
Raluca Felea, Romina Gaburro, Allan Greenleaf and Clifford Nolan

[A uniqueness theorem for inverse problems in quasilinear anisotropic media](#) Md. Ibrahim Kholil and Ziqi Sun

[Convexification-based globally convergent numerical method for a 1D coefficient inverse problem with experimental data](#)
Michael V. Klibanov, Thuy T. Le, Loc H. Nguyen, Anders Sullivan and Lam Nguyen

[Refined instability estimates for some inverse problems](#) Pu-Zhao Kow and Jenn-Nan Wang

[Kantorovich-Rubinstein metric based level-set methods for inverting modulus of gravity-force data](#)
Wenbin Li and Jianliang Qian

[Linearized inverse Schrödinger potential problem with partial data and its deep neural network inversion](#)
Sen Zou, Shuai Lu and Boxi Xu

IPI June 2023 Vol. 17, No. 3 articles:
[Imaging of conductivity distribution based on a combined reconstruction method in brain electrical impedance tomography](#)
Yanyan Shi, Yajun Lou, Meng Wang, Shuo Zheng, Zhiwei Tian and Feng Fu

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Today's Editor: Matti Lassas   University of Helsinki Today's Topics:
PhD positions in MSCA training network on computational imaging for smart biomedical devices
Postdoc position, Computational UQ, Technical University of Denmark
PhD/Postdoc position at Goethe University, Frankfurt
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From: Felix Lucka <Felix.Lucka@cwi.nl>
Sent: Tuesday, 17 April, 2023
Subject: PhD positions in MSCA training network on computational imaging for smart biomedical devices

Dear colleagues (apologies for cross-postings),

CONcISE (COmputatioNal Imaging as training Network for Smart biomedical dEvices) is a new project funded by the European Union's Marie Skłodowska-Curie Actions (MSCA) of the Horizon Europe programme that aims to revolutionise biomedical optical imaging techniques. It brings together eight beneficiaries and four associated partners from 8 European countries to create a training network for 11 PhD students. The recruiting just started and three of the positions are of particular interest for students with an interest in computational imaging and inverse problems:

"Photon transport modelling and image reconstruction algorithms for multispectral DOT" will be hosted by the Computational Physics and Inverse Problems Research Group at the University of Eastern Finland (Kuopio, Finland) and supervised by Tanja Tarvainen.
"Adaptive compressed sensing using deep learning in non-linear microscopy", will be hosted by the Computational Imaging Group at the Centrum Wiskunde & Informatica (Amsterdam, NL) and supervised by Felix Lucka and Tristan van Leeuwen.
"Learned adaptive encoder-decoder architecture for advanced fluorescence
imaging", hosted by the Center for Medical Image Computing at the University
College London (London, UK) and supervised by Simon Arridge.
All information can be found under https://urldefense.com/v3/_ https://concise- project.eu/vacancies/
        ;!!HXCxUKc!wObnFkzF52SC_8bc3Fni- GhHpPVi7AXI1lGxPrW4algndZqUxjKc2etYhyJ6ps0T1wUT-j_K4jvmZBlrbcVUHHpNGJv-$

Please help us spread the word and forward this to anyone in your network who might be interested.

Thanks a lot and best regards,
Tanja Tarvainen, Simon Arridge and Felix Lucka

Felix Lucka (he/him)
Centrum Wiskunde & Informatica
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From: Per Christian Hansen <pcha@dtu.d>
Sent: Wednesday, 8 May, 2023
Subject: Submission to IPNet Digest (vacancy)

Heading: Postdoc position, Computational UQ, Technical University of Denmark

The Technical University of Denmark opens a 2-year Postdoc position starting August 2023. It is part of the research project CUQI: Computational Uncertainty Quantification for Inverse problems https://sites.dtu.dk/cuqi.

We create a platform for modeling and computations needed to apply UQ to a range of inverse problems. This position focuses on further development of our package CUQIpy https://cuqi-dtu.github.io/CUQIpy including development of the underlying computational methods.

You will join the developer team and play an integral role in expanding CUQIpy for a wide range of inverse problems and UQ analyses. You will interact with the CUQI team to ensure that our theory and methods are put into optimal use. Research directions may include:

Design, abstraction & implementation of Bayesian methods.

Approximation methods for high-dimensional complicated posteriors.

Scalable optimization-based samplers (such as RTO).

Sampling methods exploiting gradient information.

Support and training of CUQIpy users.

CUQIpy is developed in a highly collaborative GitHub-centered workflow with regular programming sessions, code reviews, sprints, and hackathons. We offer rich opportunities to build a profile in scientific software development and computational UQ for inverse problems.

For more details and to apply (deadline June 1, 2023), see:

https://efzu.fa.em2.oraclecloud.com/hcmUI/CandidateExperience/en/sites/CX_1/job/1650/?utm_medium=jobshare

Per Christian Hansen and Jakob Sauer Jørgensen, DTU Compute

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From: Bastian von Harrach <harrach@math.uni-frankfurt.de>
Sent: Wednesday, 15 May, 2023
Subject: PhD/Postdoc position at Goethe University, Frankfurt

The Institute of Mathematics (research group of Prof. Dr. Bastian Harrach) of the Department of Computer Science and Mathematics of the Goethe-University Frankfurt am Main invites applications for a Research Assistant (m/f/d) PhD/Postdoc position (100% E13 TV-G-U, limited to 3 years) in the field of Inverse Problems. A link to the official job advertisement can be found here: http://numerical.solutions (please click "EN" in the upper right for the english job ad). Applications can be considered after the stated deadline until the position is filled.

Prof. Dr. Bastian von Harrach Institute of Mathematics Goethe University Frankfurt Robert-Mayer-Str. 10
60325 Frankfurt am Main Germany

Phone: +49 69 798 28622
mailto:harrach@math.uni-frankfurt.de http://numerical.solutions
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From: Larisa Beilina <larisa.beilina@chalmers.se>
Sent: Wednesday, 3 May, 2023
Subject: Senior lecturer or Associate Professor in optimization

The Department of Mathematical Sciences at Chalmers University of Technology and University of Gothenburg, Sweden, invites applications for a position Senior lecturer or associate professor in mathematics of optimization and computation (permanent position).

We look forward to your contribution to our research in the area of mathematical optimization, interpreted in a broad sense. This includes, but is not limited to, linear and integer optimization, non-linear programming, non-smooth optimization, inverse problems, optimal control, calculus of variations, machine learning, multilevel optimization, operations research, as well as modelling and solution of applied optimization problems.

The application should be sent electronically
by going to the link for open position application:

https://www.chalmers.se/en/about-chalmers/work-with- us/vacancies/?rmpage=job&rmjob=p11730

The deadline for applications is on June 11th, 2023.

Kind regards, Larisa Beilina, Ph.D. Professor
Department of Mathematical Sciences
Chalmers University of Technology and Gothenburg University, SE-41296, Gothenburg, Sweden
t.   +46-031-7723567
(mob.) +46-070-4177036
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From OIPE 2023 <oipe2023@tugraz.at>
Sent: Monday 17 April, 2023
Subject: OIPE 2023: Call for Papers

17th International Workshop on Optimization and Inverse Problems in Electromagnetism 2023
September, 17 - 20, 2023 | Graz, Austria Dear colleague,
I am writing to you on behalf of the organizing committee of the **17th International Workshop on Optimization and Inverse Problems in Electromagnetism 2023** (OIPE 2023), which will be held in Graz, Austria, from September 17 to September 20, 2023. It will be organized by the Institute of Fundamentals and Theory in Electrical Engineering, Faculty of Electrical and Information Engineering of Graz University of Technology.
The aim of this workshop is to discuss and share recent developments in optimization and inverse methodologies and their applications to the design and working principle of electromagnetic devices.
We are pleased to announce the **special sessions and keynote speakers** of OIPE 2023:
Special session on Topology Optimization in Electromagnetics
Keynote by Peter **Gangl**, Johann Radon Institute for Computational and Applied Mathematics, Linz (Austria)

Special session on Optimal Energy System Management
Keynote by Bharath **Rao**, Austrian Institute of Technology, Wien (Austria)

Optimization of Metamaterials in Electromagnetics
Keynote by Sławomir **Hausman**, Technical University of Lodz (Poland)

Please find the call for papers on the website oipe2023.tugraz.at.

Additionally, a one-day doctoral course on **Regularization Methods for Discrete Inverse Problems** will be held by **Silvia Gazzola**, University of Bath (UK), on Thursday, September 21, 2023.
For further details, please refer to the website or feel free to contact the organizers directly by e-Mail (oipe2023@tugraz.at).

I am looking forward to meeting you in Graz in autumn 2023.

Alice Reinbacher-Köstinger
Chair OIPE 2023

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Inverse Problems   May 2023 Volume 39 Number 5 Special Issue Articles
On global normal linear approximations for nonlinear Bayesian inverse problems
Ruanui Nicholson, Noémi Petra, Umberto Villa and Jari P Kaipio

Imaging in lossy media
Arnold Kim and Chrysoula Tsogka

Neural blind deconvolution with Poisson data
A Benfenati, A Catozzi and V Ruggiero
Sub-aperture SAR imaging with uncertainty quantification
Victor Churchill and Anne Gelb

Norm-dependent convergence and stability of the inverse scattering series for diffuse and scalar waves
Srinath Mahankali and Yunan Yang

Fluorescence image deconvolution microscopy via generative adversarial learning (FluoGAN)
Mayeul Cachia, Vasiliki Stergiopoulou, Luca Calatroni, Sebastien Schaub and Laure Blanc-Féraud

Papers

Analysis of sampling methods for imaging a periodic layer and its defects
Yosra Boukari, Houssem Haddar and Nouha Jenhani

Uniformly convex neural networks and non-stationary iterated network Tikhonov (iNETT) method
Davide Bianchi, Guanghao Lai and Wenbin Li
A probabilistic framework for uncertainty quantification in positron emission particle tracking
Avshalom Offner, Sam Manger and Jacques Vanneste

Uniqueness in determining rectangular grating profiles with a single incoming wave (Part I): TE polarization case
Jianli Xiang and Guanghui Hu

A mixed element scheme for the Helmholtz transmission eigenvalue problem for anisotropic media
Qing Liu, Tiexiang Li and Shuo Zhang

Reconstruction of smooth shape defects in waveguides using locally resonant frequencies
Angèle Niclas and Laurent Seppecher
Inverse Problems, Volume 39, Number 5, May 2023, May 2023 - IOPscience

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Today's Editor: Matti Lassas   University of Helsinki Today's Topics:
University assistant with doctorate, Graz, Austria
Post doc opportunity at UCL in Maths for Deep Learning
table of contents
Submissions for IPNet Digest: submit-ipnet@helsinki.fi
Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse- problems/ipnet-inverse-problems-network

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From: Moser, Melanie (melanie.moser@uni-graz.at)
Sent: Tuesday, 31 May, 2023
Subject: University assistant with doctorate, Graz, Austria

At the University of Graz, researchers and students work across a broad disciplinary spectrum to enlarge our knowledge, and find strategies to deal with challenges our society is confronted with and to shape tomorrow's world. The University of Graz is a place which combines high quality academic research and teaching, where achievement is rewarded, careers are promoted, and social diversity is encouraged – all within a modern, award-winning working environment. Our motto: We work for tomorrow. Join us!

The Institute of Mathematics and Scientific Computing is looking for a University assistant with doctorate (m/f/d)
https://jobs.uni-graz.at/ausschreibung/en/?jh=jtord8gt96973dzvt6369yn1sdq133z
40 hours a week
fixed-term employment for 6 years*; position to be filled as of now
Inverse Problems and Mathematical Image Processing is one of the research areas at the Institute of Mathematics and Scientific Computing, which is represented in Graz by a dedicated team of international scientists. The associated research group covers a broad spectrum of current applications with a special focus on interdisciplinarity. It offers a friendly working environment, space for creativity and independent work, an appreciative attitude and family friendliness.

Your duties

Research in the field of applied mathematics with emphasis on the analysis and the numerics of problems in mathematical imaging, inverse problems and data sciences
Collaboration in interdisciplinary cooperation projects and third-party funded projects
Independent teaching of courses in the field of applied mathematics, supervision of students and holding of examinations
Participation in organizational and administrative matters
Student support and supervision
Cooperation on organisational and administrative tasks as well as evaluation measures Your Profile
Completed doctorate/PhD in the field of Mathematics
Solid knowledge of one of the following fields: mathematical methods, analysis and numerics in imaging, inverse problems or data sciences
Ability for integration into the institute's research profile and in particular into interdisciplinary cooperation projects
Capacity for teamwork, organizational talent and ability to communicate
Ability to teach in German (after a transition period of 2 years)

Our Offer Classification

Salary scheme of the Universitäten-KV (University Collective Agreement): B1

Minimum Salary
The minimum salary as stated in the collective agreement and according to the classification scheme is EUR 60.926,60 gross/year (for full-time employment). The minimum monthly net income can be estimated as EUR 3.350,00 per month (actual net income may differ). This minimum salary may be higher due to previous employment periods eligible for inclusion and other earnings and remunerations.
We offer you a job with a lot of responsibility and variety. You can expect an enjoyable work climate, flexible work hours and numerous possibilities for further education and personal development. Take advantage of the chance to enter into a challenging work environment full of team spirit and enthusiasm for your job.
Application deadline: 05.07.2023
The University of Graz strives to increase the proportion of women in particular in management and faculty positions and therefore encourages qualified women to apply.

Especially with regard to academic staff, we welcome applications from persons with disabilities who meet the requirements of the advertised position.
* Please note the limitations of § 109 UG (university act), especially in the case of short contract terms. For further information, please refer to our general application regulations. For further information or questions, please contact:
Univ.-Prof. Dipl.-Math. Dr. Kristian Bredies kristian.bredies@uni-graz.at 03163805170
Please note that in order to comply with the applicable data protection regulations, we can only accept applications via our web-based applicant tool for this vacant position.
Official job announcement: https://jobs.uni-graz.at/ausschreibung/en/?jh=jtord8gt96973dzvt6369yn1sdq133z

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From: Simon Arridge <S.Arridge@cs.ucl.ac.uk>
Sent: Wednesday, 1 June, 2023
Subject: Post doc opportunity at UCL in Maths for Deep Learning

We have an opportunity for a 3 year postdoc position at UCL on our programme grant "Maths for Deep Learning"
https://maths4dl.ac.uk/
For more information about the post and how to apply, please visit: https://www.ucl.ac.uk/work-at-ucl/search-ucl-jobs/details?jobId=10338&jobTitle=Research%20Fellow%20in%20the%20Mathematics%20of%20Deep%20Learning
Informal enquires can be made to
Simon Arridge <s.arridge@ucl.ac.uk> or Bangti Jin <b.jin@ucl.ac.uk>

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From: noreply@iopscience.org
Subject: Inverse Problems, Volume 39, Number 6, June 2023
Sent: 28 May 2023

Inverse Problems   June 2023 Volume 39 Number 6 Special Issue Articles
On an iteratively reweighted linesearch based algorithm for nonconvex composite optimization S Bonettini, D Pezzi, M Prato and S Rebegoldi

Localized ensemble Kalman inversion X T Tong and M Morzfeld

Kale Stahl and Trung Truong

Weighted Radon transforms of vector fields, with applications to magnetoacoustoelectric tomography
L Kunyansky, E McDugald and B Shearer

A general method for extracting the amplitude spectrum of the seismic wavelet from the seismic traces
Haoqi Zhao, Jinghuai Gao and Junxiong Jia

A Bayesian interpretation of the L-curve
Jérôme Antoni, Jérôme Idier and Sébastien Bourguignon

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IPNet Digest, Volume 30, Number 07   August 3, 2023

Today's Editor: Matti Lassas   University of Helsinki

Today's Topics:

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Ruming Zhang (zhang@math.tu-berlin.de)
Sent: Friday, 21 July, 2023
Subject: Doctoral Researcher Positions (100% TV-L E13), TU Berlin, Germany

We are currently seeking for an excellent Doctoral Researcher (m/f/d - 100%) at Technical University of Berlin. The doctoral research is expected to work in the field of Inverse Problems (research on numerical methods for inverse scattering problems in waveguides). The salary scale of this position is based on the wage agreement of the civil service in TV-L E13 (100%). The position is funded up to 5 years.

Requirements:
Completed university degree (Diplom, Master or equivalent) in Mathematics or a closely related course of studies. Knowledge in the field of numerical methods for partial differential equations, numerical methods for optimization problems, good coding skills (for example in matlab).
Excellent English language skills.

Please send your e-mail application with the reference number and the usual documents (cover letter, CV, certificates in one pdf file) to Prof.
Dr. Ruming Zhang (zhang@math.tu-berlin.de) before August 18, 2023.

https://www.jobs.tu-berlin.de/stellenausschreibungen/169538

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From: Andreas Alpers <awalpers@yahoo.de>
Sent: Friday, 21 July, 2023
Subject: Postdoc position in Mathematical Imaging/ Constrained Clustering at University of Liverpool, UK
Applications are invited for a 24-month EPSRC funded Postdoctoral Research Associate post at the Department of Mathematics, University of Liverpool, UK.
The position is funded by Dr Alpers' EPSRC New Investigator Award project "Optimal Grain Diagrams: Mathematical Analysis and Algorithms". The Postdoctoral Research Associate will contribute to a programme of work that aims at enabling new materials discovery by advancing the theory and

computation of geometric diagram structures describing polycrystals by exploiting a recently established link to constrained clustering.

The applicant should have (or be about to obtain) a PhD in Mathematics, Mathematical Optimisation, Operations Research, Machine Learning, Computer Science, or any related area, the ability to pursue research independently and as part of a team, and a track record of high-quality original research. Computational skills and expertise in clustering and/or optimisation as well as interest in materials science applications would be advantageous.

Further information about the post and instructions on how to apply can be found at:
https://my.corehr.com/pls/ulivrecruit/erq_jobspec_version_4.display_form?p_company=1&p_internal_external=E&p_display_in_irish=N&p_process_type=&p_applicant_no=&p_form_profile_detail=&p_display_apply_ind=Y&p_refresh_search=Y&p_recruitment_id=062566

Informal enquires can be sent to Andreas Alpers at
andreas.alpers@liverpool.ac.uk<mailto:andreas.alpers@liverpool.ac.uk>.

Closing date: August 11, 2023
Start date: flexible (preferable autumn 2023)

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From: Matti Lassas, matti.lassas@helsinki.fi
Subject: ERC Funded Doctoral and Postdoc Positions in Mathematical Inverse Problems at the University of Helsinki

Applications are invited for two postdoctoral researchers and a doctoral student in mathematical inverse problems at the University of Helsinki. The position will be funded by the ERC advanced grant InversePDE - Geometric Methods in Inverse Problems for Partial Differential Equations and Centre of Excellence on Inverse Modelling and Imaging, led by Professor Matti Lassas.

The InversePDE project studies inverse problems for partial differential equations (PDEs) and geometric inverse problems. A typical inverse problem is the determination of the coefficient functions of a PDE from indirect data. The project aims to obtain unique solvability and stability results for inverse problems and to develop solution algorithms for these problems that are based on machine learning. The project will study inverse problems for linear and non-linear hyperbolic and elliptic PDEs by applying analysis, differential geometry, microlocal analysis, and probabilistic methods.

The project will also combine methods of machine learning, in particular neural networks, and manifold learning techniques, with the mathematical theory of inverse problems to invent new algorithms that are rigorously guaranteed to work. We are looking for postdoctoral researchers and doctoral students interested in working on inverse problems and their applications. We also welcome applications from postdoctoral researchers who have not earlier worked on the above topics but are interested in extending their expertise to new fields. Women and other underrepresented groups in the field of mathematics are strongly encouraged to apply.

Contract period and expected starting dates

Starting date for the graduate students position may be between November 1, 2023-August 1, 2024. Postdoctoral positions are for 2 years, with a possible extension to a 3rd year depending on performance and funding. The starting date for the first postdoctoral position may be in the period October 1, 2023- February 29, 2024. The starting date for the second position may be in the period January 1, 2024- September 1, 2024.

Application deadlines Postdoc: August 25, 2023 Doctoral Student: October 1, 2023

Salary and benefits

The starting salary of a PhD student is typically 2400 - 2800 euros/month, depending on previous qualifications and experience. The starting salary of a Postdoctoral Researcher is typically 3500 - 3800 euros/month, depending on previous qualifications and experience.

The University of Helsinki offers comprehensive services to its employees, including occupational health care and health insurance, sports facilities, and opportunities for professional development. The University provides support for internationally recruited employees with their transition to work and life in Finland. For more on the University of Helsinki as an employer, please see **https://www.helsinki.fi/en/about-us/careers**.

How to apply

The applicants should submit the following documents CV (max 2 pages) Cover letter detailing their familiarity with analysis of PDEs, geometry, together, and/or neural networks and other machine learning methods with their interest to study mathematical inverse problems (max 2 pages) Names and institutional email addresses of up to 3 references Please submit your documents using the University of Helsinki Recruitment System via the 'Apply Now' link on the call texts. Postdoctoral researcher **https://jobs.helsinki.fi/job/Postdoctoral-Researcher%252C-Mathematical-Inverse-Problems/774009902/**? Doctoral researcher **https://jobs.helsinki.fi/job/Doctoral-Researcher%252C-Mathematical-Inverse-Problems/774017702/?f** Applicants, who are employees of the University of Helsinki, are requested to leave their application by using the employee login.

The University of Helsinki seeks to promote an equitable and inclusive working environment and welcomes applicants of any gender, linguistic and cultural background, or minority group. Additional information For further enquiry related to the position, please contact Professor Matti Lassas (Matti.Lassas(at)helsinki.fi) If you need support with the recruitment system, please contact hr-kumpula(at)helsinki.fi.

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Special Issue Articles

Well-posedness of the stochastic time-fractional diffusion and wave equations and inverse random source problems
Matti Lassas, Zhiyuan Li and Zhidong Zhang

Variable projection methods for separable nonlinear inverse problems with general-form Tikhonov regularization
Malena I Español and Mirjeta

State estimation approach to dual-modal imaging of two-phase flow based on electromagnetic flow tomography and electrical tomography
M Ziaul Arif, Aku Seppänen and Marko Vauhkonen

Lagrangian approach and shape gradient for inverse problem of breaking line identification in solid: contact with adhesion
Victor A Kovtunenko

Papers

Fast iterative reconstruction for multi-spectral CT by a Schmidt orthogonal modification algorithm (SOMA)
Huiying Pan, Shusen Zhao, Weibin Zhang, Huitao Zhang and Xing

A novel quantitative inverse scattering scheme using interior resonant modes
Youzi He, Hongyu Liu and Xianchao Wang

Inverse problems for mean field games
Hongyu Liu, Chenchen Mou and Shen Zhang

Convergence analysis of critical point regularization with non-convex regularizers
Daniel Obmann and Markus Haltmeier

Dual gradient method for ill-posed problems using multiple repeated measurement data
Qinian Jin and Wei Wang

Hierarchical off-diagonal low-rank approximation of Hessians in inverse problems, with application to ice sheet model initialization
Tucker Hartland, Georg Stadler, Mauro Perego, Kim Liegeois and Noémi Petra

Series reversion for electrical impedance tomography with modeling errors *
H Garde, N Hyvönen and T Kuutela

Radon transform on algebraic Cormack α-curves inversion formula
T T Truong

A statistical framework for domain shape estimation in Stokes flows
Jeff Borggaard, Nathan E Glatt-Holtz and Justin Krometis

Lipschitz stability of recovering the conductivity from internal current densities
Lingyun Qiu and Siqin Zheng

Convergence analysis of an alternating direction method of multipliers for the identification of nonsmooth diffusion parameters with total variation
Y Ouakrim, I Boutaayamou, Y El Yazidi and A Zafrar

Inverse problems for constrained parabolic variational-hemivariational inequalities *
Stanisław Migórski, Dong-ling Cai and Yi-bin Xiao

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Today's Topics:

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From: Tapio Helin Tapio.Helin@lut.fi
Sent: Wednesday, 9 August, 2023
Subject: PhD position in computational inverse problems at LUT University

Dear all,

we have a fully funded doctoral student position in computational inverse problems open at LUT university. The position is connected to the Systems and Engineering Science Doctorate (SEED) programme, which is a European MSCA programme running from 2023 to 2028.

The thesis work is related to industrial collaboration with ABB Oy. The focus of the thesis is to identify and quantify uncertainty in the structural parameters of electrical motors by analyzing vibration signals from an electric motor. This mathematical problem falls within the field of inverse problems, specifically in relation to linear elasticity. The project will involve studying topics such as inverse problems, partial differential equations, and computational statistics.

The job is based in Lappeenranta. The doctoral student will be co-supervised by prof. Claudia Schillings (Freie Universität Berlin, Germany) and is expected to spend 10–12 months at the FU Berlin and 4–6 months at the ABB Oy during the doctoral studies.

Moreover, the candidate must fulfil the geographic mobility requirement. The SEED programme follows the general MSCA mobility requirement where the candidate may not have resided or carried out their main activity (work, studies, etc.) in Finland for more than 12 months in the 3 years immediately before the call deadline.

The application deadline is September 30th. Applications can be submitted via

https://lut.rekrytointi.com/paikat/index.php?jid=932&o=A_RJ

where also more information is available.

If you know any interested students, I would very much appreciate spreading the word.

Best, Tapio

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IPI December 2023 Vol. 17, No. 6 articles:

[A framelet sparse reconstruction method for pansharpening with guaranteed convergence](#)

Zhong-Cheng Wu, Ting-Zhu Huang, Liang-Jian Deng and Gemine Vivone

[Pestov identities and X-ray tomography on manifolds of low regularity](#)

Joonas Ilmavirta and Antti Kykkänen

[Deterministic-statistical approach for an inverse acoustic source problem using multiple frequency limited aperture data](#)

Yanfang Liu, Zhizhang Wu, Jiguang Sun and Zhiwen Zhang

[Inverse Problems and Imaging (aimsciences.org)](#)

Best regards,

Charley Denton

Communications Specialist

American Institute of Mathematical Sciences

Email: cdenton@aimsciences.org

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Special Issue Articles

[**Inverse problem for a nonlocal diffuse optical tomography equation**](#)

Philipp Zimmermann

[**Subsampling in ensemble Kalman inversion**](#)

Matei Hanu, Jonas Latz and Claudia Schillings

Bilevel inverse problems in neuromorphic imaging

Harbir Antil and David Sayre

Estimation of the cell membrane permeability for gas transport from surface pH measurements

A Bocchinfuso, D Calvetti and E Somersalo

papers

A combination of Kohn-Vogelius and DDM methods for a geometrical inverse problem

Slim Chaabane, Houssem Haddar and Rahma Jerbi

Stable reconstruction of simple Riemannian manifolds from unknown interior sources

Maarten V de Hoop, Joonas Ilmavirta, Matti Lassas and Teemu Saksala

A two-stage numerical approach for the sparse initial source identification of a diffusion–advection equation

Umberto Biccari, Yongcun Song, Xiaoming Yuan and Enrique Zuazua

Determining Lamé coefficients by the elastic Dirichlet-to-Neumann map on a Riemannian manifold

Xiaoming Tan and Genqian Liu

Semi-discrete Tikhonov regularization in RKHS with large randomly distributed noise

Min Zhong and Yu Hu

An inverse problem for semilinear equations involving the fractional Laplacian

Pu-Zhao Kow, Shiqi Ma and Suman Kumar Sahoo

Template-based CT reconstruction with optimal transport and total generalized variation

Yiming Gao, Zhengmeng Jin and Xu Li

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Today's Editor: Matti Lassas   University of Helsinki

Today's Topics:

1. Core Imaging Library (CIL) User Meeting and Software Training, RAL, Harwell, UK, 13-15 Nov 2023
2. postdoc positions at MaLGa, Genoa - inverse problems, machine learning and optimization
3. University assistant with doctorate, Graz, Austria
4. Assistant Professor (Tenure-Track) Position at UC Davis
5. New book: Generalized Radon Transforms and Imaging by Scattered Particles: Broken Rays, Cones, and Stars in Tomography
6. Table of Contents

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Jakob Sauer Jørgensen jakj@dtu.dk
Sent: Tuesday, 26 September, 2023
Subject: Core Imaging Library (CIL) User Meeting and Software Training, RAL, Harwell, UK, 13-15 Nov 2023

After a successful Core Imaging Library (CIL, https://ccpi.ac.uk/cil/) user hackathon at the Isaac Newton Institute in Cambridge this March, we are pleased to announce the first CIL User Meeting, which will take place at the Rutherford Appleton Laboratory (RAL), in Harwell, UK from 13 to 15 November 2023. This will be an opportunity for CIL users to meet and share CIL-based work, experiences, ideas and feature requests with the developer team and other users working within tomography and other inverse problems. We aim for this to kick-start an annual user meeting series aimed at growing a strong community to allow more knowledge sharing and support.

As part of the event, there will be hands-on training and mini hackathon/support sessions, the CCPi working group meeting as well as tours of some of the imaging facilities at RAL. See the full programme and registration info (travel support available) at

https://ccpi.ac.uk/events/first-cil-user-meeting/

Please help us spread the word and hope to see you there!

On behalf of the CIL team,

Jakob Sauer Jørgensen
Senior Researcher
Technical University of Denmark (DTU)
jakj@dtu.dk

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From: Giovanni Alberti Giovanni.Alberti@unige.it
Sent: Thursday, 7 September, 2023
Subject: postdoc positions at MaLGa, Genoa - inverse problems, machine learning and optimization

Dear all,
We are looking to hire two postdocs at the Machine Learning Genoa Center (MaLGa), Department of Mathematics.
1. **Inverse problems and machine learning**. The aim of the project will be to develop innovative techniques to solve inverse problems using generative models. The project will be co-supervised by Giovanni S. Alberti (Genoa) and Matteo Santacesaria (Genoa).
2. **Compressed sensing for nonlinear inverse problems**. The main research themes will be compressed sensing and optimization for PDE related inverse problems. The project will be co-supervised by Giovanni S. Alberti (Genoa) and Clarice Poon (Warwick). The postdoc will be based in Genoa, with frequent visits to Warwick. This position is funded by the ERC StG SAMPDE.
The start of the positions is flexible, from January 2024. The duration of the contracts is 2 years, and can be extended by 1 year. Interested candidates should submit an expression of interest by 2023-09-30. Details can be found here.
Best wishes
Giovanni

Giovanni S. Alberti
MaLGa, Machine Learning Genoa Center
Department of Mathematics
University of Genoa

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From: Moser, Melanie (melanie.moser@uni-graz.at)
Sent: Wednesday, 20 September, 2023
Subject: University assistant with doctorate, Graz, Austria

The Department of Mathematics and Scientific Computing is looking for a **University assistant with doctorate (m/f/d)**

https://jobs.uni-graz.at/en/jobs/db515342-f0d3-6e4a-b08c-64feda8c34fc

• Application deadline: 11.10.2023
• Salary Category: B1 mit Doktorat
• Salary per Year: € 60,926.60
• Employment Start: As soon as possible
• Hours per week: 40.00 h/w
• Duration of Contract: Temporary employment
• Temporary Employment: 2 years

Your Responsibilities
• Independent research in the field of applied mathematics with links to topics in mathematical image processing, inverse problems, and data science
• Collaboration in interdisciplinary cooperation projects and third-party funded projects
• Independent teaching of courses in the field of applied mathematics
• supervision of students and holding of examinations
• Participation in organisational and administrative tasks as well as evaluation measures

Your Profile
• Completed doctorate/PhD in the field of Mathematics

- Solid knowledge of one or more current research areas in applied mathematics
- Ability for integration into the institute's research profile and in particular into interdisciplinary cooperation projects
- Capacity for teamwork, organizational talent and ability to communicate
- Very good command of English
- German language skills (desirable)

We offer an annual gross salary of at least € 60,926.60 for a fulltime position. An overpayment based on qualification and experience is possible..

We Offer

- Meaning: We offer meaningful work for the world of tomorrow.

- Our internal continuing education program is as colorful as the university itself.

- Collaboration: With us, you'll find interdisciplinary, cross-professional opportunities to work together.

- Benefits: Of course, there are all the usual benefits, from A "access to healthcare services" to Z "Zero emission goal".

- Diversity: Besides our various scientific fields and their related issius, we offer a working environment in which diversity is lived.

- Flexibility: We demonstrate flexibility not only with the various working time models but also trough the offers for the compatibility of family and career.

About us
At the University of Graz, 4700 employees work together on future questions and solutions for the world of tomorrow. Our students and researchers face the great challenges of society and carry the knowledge out. We work for tomorrow. Become part of it!

Contact
Prof. Dr. Kristian Bredies | kristian.bredies(at)uni-graz.at

The University of Graz strives to increase the proportion of women in particular in management and faculty positions and therefore encourages qualified women to apply. In the event of underrepresentation, women with equal qualifications are generally given priority for admission. Especially with regard to academic staff, we welcome applications from persons with disabilities who meet the requirements of the advertised position.
We work for tomorrow. Join us!

Please note that in order to comply with the applicable data protection regulations, we can only accept applications via our web-based applicant tool for this vacant position:
https://jobs.uni-graz.at/en/jobs/db515342-f0d3-6e4a-b08c-64feda8c34fc
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From: Naoki Saito saito@math.ucdavis.edu
Sent: Thursday ,21 September, 2023
Subject: Assistant Professor (Tenure-Track) Position at UC Davis

The Department of Mathematics at the University of California, Davis invites applications for one Assistant Professor (tenure-track) faculty position starting July 1, 2024. The Department is particularly interested in hiring in Scientific Computation, Data Science, and Numerical Analysis. Minimum qualifications for the position include a Ph.D. or its equivalent in the Mathematical Sciences or a related field and demonstrated potential for excellence in teaching and research. Duties include mathematical research, undergraduate and graduate teaching, and departmental, university and professional service.

Applications include: Cover Letter, CV, Research Statement, Teaching Statement, Letters of Reference and a Statement of Contributions to Diversity. Additional information about the Department may be found at https://www.math.ucdavis.edu.

Applications will be accepted until the position is filled. To guarantee full consideration, the application should be received by December 1, 2023. The application is available through UCRecruit: recruit.ucdavis.edu/JPF05910.

The University of California is committed to creating and maintaining a community dedicated to the advancement, application, and transmission of knowledge and creative endeavors through academic excellence, where all individuals who participate in University programs and activities can work and learn together in a safe and secure environment, free of violence, harassment, discrimination, exploitation, or intimidation. With this commitment, UC Davis conducts a reference check on all first choice candidates for Academic Senate Assistant Professor or Lecturer with Potential for Security of Employment, Steps 4, 5, or 6, or Acting Professor of Law positions. The reference check involves contacting the administration of the applicant's previous institution(s) to ask whether there have been substantiated findings of misconduct that would violate the University's Faculty Code of Conduct. To implement this process, UC Davis requires all applicants for any open search for assistant professor to complete, sign, and upload the form entitled "Authorization to Release Information" into RECRUIT as part of their application. If an applicant does not include the signed authorization with the application materials, the application will be considered incomplete, and as with any incomplete application, will not receive further consideration. Although all applicants for faculty recruitments must complete the entire application, only finalists considered for Academic Senate Assistant Professor or Lecturer with Potential for Security of Employment, Steps 4, 5, or 6, or Acting Professor of Law positions will be subject to reference checks.

Naoki Saito, Ph.D., Director, UCD4IDS; Professor, Department of Mathematics
University of California, One Shields Avenue, Davis, CA 95616-8633 USA
Voice: 530-754-2121, Fax: 530-752-6635, Email: saito@math.ucdavis.edu
Home Page: https://www.math.ucdavis.edu/~saito/

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From: Ambartsoumian, Gaik gambarts@uta.edu
Sent: Wednesday, 27 September, 2023
Subject: New book

"Generalized Radon Transforms and Imaging by Scattered Particles:
Broken Rays, Cones, and Stars in Tomography",

by Gaik Ambartsoumian

A generalized Radon transform (GRT) maps a function to its weighted integrals along a family of curves or surfaces. Such operators appear in mathematical models of various imaging modalities. The GRTs integrating along smooth curves and surfaces (lines, planes, circles, spheres, amongst others) have been studied at great lengths for decades, but relatively little attention has been paid to transforms integrating along non-smooth trajectories. Recently, an interesting new class of GRTs emerged at the forefront of research in integral geometry. The two common features of these transforms are the presence of a "vertex" in their paths of integration (broken rays, cones, and stars) and their relation to imaging techniques based on physics of scattered particles (Compton camera imaging, single scattering tomography, etc).

This book covers the relevant imaging modalities, their mathematical models, and the related GRTs. The discussion of the latter comprises a thorough exploration of their known mathematical properties, including injectivity, inversion, range description and microlocal analysis. The mathematical background required for reading most of the book is at the level of an advanced undergraduate student, which should make its content attractive for a large audience of specialists interested in imaging. Mathematicians may appreciate certain parts of the theory that are particularly elegant with connections to functional analysis, PDEs, and algebraic geometry.

Gaik Ambartsoumian, Associate Professor
Department of Mathematics
The University of Texas at Arlington
Arlington, TX 76019-0408, USA
Tel: (817) 272-3384, Fax (817) 272-5802
URL: https://gambarts.utasites.cloud/
E-mail: gambarts@uta.edu

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Topical Review

Deep learning methods for partial differential equations and related parameter identification problems
Derick Nganyu Tanyu, Jianfeng Ning, Tom Freudenberg, Nick Heilenkötter, Andreas Rademacher, Uwe Iben and Peter Maass

Special Issue Article

Deep learning methods for partial differential equations and related parameter identification problems
Derick Nganyu Tanyu, Jianfeng Ning, Tom Freudenberg, Nick Heilenkötter, Andreas Rademacher, Uwe Iben and Peter Maas

Recovery of multiple parameters in subdiffusion from one lateral boundary measurement
Siyu Cen, Bangti Jin, Yikan Liu and Zhi Zhou

Papers

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IPNet Digest, Volume 30, Number 10   November 7, 2023

Today's Editor: Matti Lassas   University of Helsinki

Today's Topics:

1. SIAM Conference on Imaging Science 2024
2. Faculty Openings at Rice University
3. Postdoctoral position in pde's and inverse problems at University of Pavia
4. Tenure-track Professorship "Mathematics in Sciences, Engineering or Economics" at Karlsruhe Institute of Technology
5. CUQIpy Training Course, DTU, Copenhagen, December 7–8, 2023
6. PhD Summer School - Mathematics and Machine Learning for Image Analysis (University of Bologna) 4-12 June 2024
7. Table of Contents

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Kui Ren kr2002@columbia.edu
Sent: Wednesday,11 October, 2023
Subject: SIAM Conference on Imaging Science 2024
Dear Colleagues,
The 2024 SIAM Conference on Imaging Science will be held in May 2024 in Atlanta. The conference website is here:
SIAM Conference on Imaging Science (IS24) | SIAM
We look forward to participation from the IPNet community.
Samuli Siltanen and Kui Ren

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From: Shiqian Ma sqma@rice.edu
Sent: Saturday,14 October, 2023
Subject: Faculty Openings at Rice University

The Department of Computational Applied Mathematics and Operations Research (CMOR) at Rice University now invites applicants for the following Faculty Openings at Rice University George R. Brown School of Engineering. When applying, you will be prompted to select one department of interest. Please be sure to choose CMOR if you wish to be considered by the CMOR department.

Please click the following links for details.
• Assistant Professor of Energy & Sustainability
(https://apply.interfolio.com/134146)
• Assistant Professor of Future Computing
(https://apply.interfolio.com/134150)
• Open Rank Faculty Positions in Advanced Materials
(https://apply.interfolio.com/134151)
• Open Rank Faculty Positions in Resilient & Adaptive Communities
(https://apply.interfolio.com/134153)

Shiqian Ma
Computational Applied Math & Operations Research
Rice University
https://sqma.rice.edu/

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From: Luca Rondi luca.rondi@unipv.it
Sent: Monday ,23 October, 2023
Subject: Postdoctoral position in pde's and inverse problems at University of Pavia

Dear all,

I would like to draw your attention to the opening of a postdoctoral position in PDE's, with focus on inverse problems, at the University of Pavia.

The candidate should have (or be close to obtain) a PhD in Mathematics or related areas and should be interested in PDE's, Calculus of Variations or inverse problems from either a theoretical or a numerical point of view.

Contract is for one year, with possible extension for another year.

Expected deadline for the applications is early December 2023, expected starting date is March 2024.

Please see http://cvgmt.sns.it/position/821/ for detailed and updated information.

Interested candidates are welcome to send to me an expression of interest. I will be glad to provide further details and help with the bureaucracy of Italian applications.

Best regards,
Luca Rondi
luca.rondi@unipv.it
Dipartimento di Matematica
Università degli Studi di Pavia

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From: Andreas Rieder andreas.rieder@kit.edu
Sent: Friday, 27 October, 2023
Subject: Tenure-track Professorship "Mathematics in Sciences, Engineering or Economics" at Karlsruhe Institute of Technology

The Department of Mathematics at the Karlsruhe Institute of Technology
(KIT) invites applications for a tenure-track professor-ship (W1) „Mathematics in Sciences, Engineering or Economics" beginning at the earliest possible date.

For detailed information see

https://www.pse.kit.edu/english/karriere/joboffer.php?id=143194

The application deadline is January 31, 2024.

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From: Per Christian Hansen pcha@dtu.dk
Sent: Sunday, 15 October, 2023
Subject: CUQIpy Training Course, DTU, Copenhagen, December 7–8, 2023

We are happy to inform you that we will organize a 2-day training course at the Technical University of Denmark focusing on our python software package *CUQIpy* for computational uncertainty quantification (UQ) for inverse problems. After completing the course, participants will be able to use CUQIpy to model statistical inverse problems and perform UQ on them.

CUQIpy is developed as part of the CUQI project (https://sites.dtu.dk/cuqi) funded by the Villum Foundation. Both the software and the course are aimed at non-experts in Bayesian inverse problems. For more details, see https://cuqi-dtu.github.io/CUQIpy/ .

In the training course, we will give a brief introduction to statistical inverse problems and UQ. This is followed by hands-on tutorials (bring your laptop!) on the software and its capabilities for modeling and performing UQ on inverse problems, with examples from image deblurring and X-ray CT as well as inverse problems based on partial differential equations. The rest of the course is devoted to working on a small use-case with CUQIpy and participants are encouraged to bring their own case and data.

The course takes place at DTU's campus in Lyngby, north of Copenhagen. We start Thursday, Dec. 7 at 9am and finish around 3pm on Friday, Dec. 8. There is no registration fee. Participants will cover their own travel and accommodation. A convenient option is the Zleep Hotel Lyngby across from campus: https://hrewards.com/en/zleep-hotel-lyngby

To register for the course, please send an email message to us.

With best regards, Jakob Sauer Jørgensen jakj@dtu.dk and Per Christian Hansen pcha@dtu.dk

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Professor Per Christian Hansen
Villum Investigator
Section for Scientific Computing
DTU Compute - Technical University of Denmark
Tel +45 23.65.27.98
Homepage: http://people.compute.dtu.dk/pcha/
LinkedIn: https://www.linkedin.com/in/per-christian-hansen-23bb55209/
CUQI project: https://sites.dtu.dk/cuqi

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From: Matteo Santacesaria Matteo.Santacesaria@unige.it
Sent: Monday, 16 October, 2023
Subject: PhD Summer School - Mathematics and Machine Learning for Image Analysis (University of Bologna) 4-12 June 2024

Dear all,

I would like to invite all PhD students and young researchers to the summer school "Mathematics and Machine Learning for Image Analysis" that will be held at University of Bologna from 4 till 12 June 2024.

The Summer School aims to tackle cross-cutting mathematical approaches to Imaging Sciences, essential for young PhD students/researchers interested in discovering the fascinating world of the

mathematics for imaging.
The school aims at providing the students with the theoretical and applied basics of the mathematics for imaging with an overview to applications which are vital to understand recent advances and current challenges in imaging science.

The lecturers and topics are as follows:

Alessandro Foi (Tampereen yliopisto, Finland): Modeling Signal-Dependent and Correlated Noise in Imaging
Ulugbek Kamilov (Washington University in St. Louis, USA): Optimization based machine learning for computational imaging
Jean-Christophe Pesquet (CentraleSupélec - Université Paris-Saclay, France): Numerical optimization methods in imaging
Lorenzo Rosasco (MaLGa, Università di Genova, Italy): Introductory Machine Learning
Michaël Unser (EPFL, Lausanne, Switzerland): Functional optimization methods for machine learning
Please visit the website for all information: https://site.unibo.it/mathematical-ml-imaging/en
The registration will open in the next few weeks.

On behalf of the organizing committee,

Matteo Santacesaria
Assistant Professor
MaLGa - Machine Learning Genoa Center
Department of Mathematics
University of Genoa
Personal Homepage

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From: noreply@iopscience.org>
Sent: Wednesday 1 November 2023
Subject: Table of Contents

Papers
Determining Riemannian manifolds from nonlinear wave observations at a single point
Leo Tzou
Inverse radiative transfer with goal-oriented *hp*-adaptive mesh refinement: adaptive-mesh inversion
Shukai Du and Samuel N Stechmann
Numerical resolution of the inverse source problem for EEG using the quasi-reversibility method
M Darbas, J Leblond, J-P Marmorat and P-H Tournier
Sparse Bayesian inference with regularized Gaussian distributions
Jasper M Everink, Yiqiu Dong and Martin S Andersen
Uniqueness in determining rectangular grating profiles with a single incoming wave (part II): TM polarization case
Jianli Xiang and Guanghui Hu
Divide-and-conquer DNN approach for the inverse point source problem using a few single frequency measurements
Hang Du, Zhaoxing Li, Juan Liu, Yanfang Liu and Jiguang Sun
Regularized factorization method for a perturbed positive compact operator applied to inverse scattering
Isaac Harris
Mittag–Leffler expansions for inverse spectral problems with mixed data
Zhaoying Wei and Guangsheng Wei

[An autoencoder compression approach for accelerating large-scale inverse problems](#)
Jonathan Wittmer, Jacob Badger, Hari Sundar and Tan Bui-Thanh

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Today's Editor: Matti Lassas   University of Helsinki

Today's Topics:

1. Postdoctoral Fellow-inverse problems and medical imaging: Colorado State University
2. Senior lecturer or associate professor in applied mathematics at Chalmers/GU, Gothenburg, Sweden
3. Table of Contents
4. Table of Contents: AIMS

Submissions for IPNet Digest: submit-ipnet@helsinki.fi

Information about IPNet: https://www.helsinki.fi/en/researchgroups/inverse-problems/ipnet-inverse-problems-network

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From: Jennifer Mueller jennifer.l.mueller@gmail.com
Sent: Wednesday, 8 November, 2023
Subject: Submission to IPNet

COLORADO STATE UNIVERSITY
DEPARTMENT OF MATHEMATICS
Postdoctoral Fellow – Inverse problems in medical imaging

The Department of Mathematics at Colorado State University invites applications for a postdoctoral fellow with an anticipated start in the 2024-2025 academic year. The successful candidate will work with a research team headed by Yates Endowment Chair, Jennifer Mueller, to conduct research on inverse problems in medical imaging, and specifically will have expertise in electrical impedance tomography or ultrasound computed tomography with experience working with, and preferably collecting, experimental data. The Fellow's activities will include producing relevant scholarly products, contributions to grant proposals, participation in seminars, teaching one course per year, and mentoring students.

All individuals interested in applying for Postdoctoral Fellow or Research Scientist or Research Scholar positions in the Department of Mathematics must apply through our pool of interested applicants. For complete details and/or to apply, go to: https://jobs.colostate.edu/postings/129347. If your research experience is related to inverse problems in medical imaging, in your cover letter be sure to mention that you are interested in working with Dr. Jennifer Mueller.

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From: Larisa Beilina larisa.beilina@chalmers.se
Sent: Tuesday, 28 November, 2023
Subject: Senior lecturer or associate professor in applied mathematics at Chalmers/GU, Gothenburg, Sweden

We are looking for a highly motivated researcher and teacher in applied mathematics to join us as a senior lecturer or associate professor, to complement and strengthen our research groups at the Division of Applied Mathematics and Statistics, Department of Mathematical Sciences.

At the division, we conduct internationally recognized research in areas such as the theory and

implementation of finite element methods, mathematical optimization, inverse wave propagation problems, kinetic equations, stochastic partial differential equations, geometric integration, biomathematics, spatial statistics, and data science.

The department and the division

The Department of Mathematical Sciences is a fully integrated department between Chalmers University of Technology and the University of Gothenburg. The department has about 200 faculty and staff members and is one of the largest departments of mathematical sciences in the Nordic countries. We teach a broad spectrum of courses across programs at the two universities. Internationally high-level research is pursued in both pure and applied mathematics, as well as in mathematical statistics.

Major responsibilities
You are expected to conduct independent research in applied mathematics and highly encouraged to collaborate with the researchers at our department. In addition, you are expected to actively apply for external funding for your research projects.

You will be responsible for instructing mathematics at all levels, which includes supervision of undergraduate, master's, and PhD students. Most of our educational mission is at the undergraduate level. Currently, there is a demand for additional instructors for courses in applied and computational mathematics, with a particular focus on numerical analysis for partial differential equations.

Departmental committee responsibilities are shared among all faculty members, and a portion of these duties will be assigned to you as part of your role.

Your profile
You must have a doctoral degree in Applied Mathematics or in another related field. A good record of academic research is required as well as well-documented university level teaching experience.

Contract terms
Full-time permanent employment.

Further information about this position can be found at the link:

https://www.chalmers.se/en/about-chalmers/work-with-us/vacancies/?rmpage=job&rmjob=p12313

Application deadline: 2024-01-14

For questions, please contact:
Bernt Wennberg, head of the Mathematical Sciences, wennberg@chalmers.se
Serik Sagitov, head of the division, serik@chalmers.se
Irina Pettersson, head of the unit, irinap@chalmers.se

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From: noreply@iopscience.org
Sent: Wednesday, 22 November, 2023
Subject: Inverse Problems, Volume 39, Number 12, December 2023

Special Issue Article
Reduced-order autodifferentiable ensemble Kalman filters
Yuming Chen, Daniel Sanz-Alonso and Rebecca Willett

Papers

[A robust adaptive-thresholding primal-dual sparse recovery for THz imaging](#)
Wang Tianhe, Jiang Ming, Ding Jinshan, Zhang Yuhong and Xu Zhong

[Convexification for the viscocity solution for a coefficient inverse problem for the radiative transfer equation](#)
Michael V Klibanov, Jingzhi Li and Zhipeng Yang

[Adaptive Gaussian process regression for efficient building of surrogate models in inverse problems](#)
Phillip Semler and Martin Weiser

[Adaptive anadromic regularization method for the Cauchy problem of the Helmholtz equation](#)
Haithem Omri and Fadhel Jday

[Solving time-fractional diffusion equations with a singular source term](#)
Yavar Kian and Éric Soccorsi

[Phase recovery from phaseless scattering data for discrete Schrödinger operators](#)
Roman Novikov and Basant Lal Sharma

[Adaptive Spectral Inversion for inverse medium problems](#)
Yannik G Gleichmann and Marcus J Grote

[Stability estimates for the expected utility in Bayesian optimal experimental design](#)
Duc-Lam Duong, Tapio Helin and Jose Rodrigo Rojo-Garcia

[Stability estimates for an inverse problem for Schrödinger operators at high frequencies from arbitrary partial boundary measurements](#)
Xiaomeng Zhao and Ganghua Yuan

[Strong maximum *a posteriori* estimation in Banach spaces with Gaussian priors](#)
Hefin Lambley

[Relaxation approach for learning neural network regularizers for a class of identification problems](#)
Sébastien Court

[Determining the viscosity of the Navier–Stokes equations from observations of finitely many modes](#)
Animikh Biswas and Joshua Hudson

[Multiscale hierarchical decomposition methods for ill-posed problems](#)
Stefan Kindermann, Elena Resmerita and Tobias Wolf

[Component-wise iterative ensemble Kalman inversion for static Bayesian models with unknown measurement error covariance](#)
Imke Botha, Matthew P Adams, David Frazier, Dang Khuong Tran, Frederick R Bennett and Christopher Drovandi

[Born and inverse Born series for scattering problems with Kerr nonlinearities](#)
Nicholas DeFilippis, Shari Moskow and John C Schotland

[Multipoint formulas in inverse problems and their numerical implementation](#)
Roman G Novikov, Vladimir N Sivkin and Grigory V Sabinin

Optimal design of strain sensor placement for distributed static load determination
Benjamin K Morris and R Benjamin Davis

Invertible residual networks in the context of regularization theory for linear inverse problems
Clemens Arndt, Alexander Denker, Sören Dittmer, Nick Heilenkötter, Meira Iske, Tobias Kluth, Peter Maass and Judith Nickel

Linearly convergent adjoint free solution of least squares problems by random descent
Dirk A Lorenz, Felix Schneppe and Lionel Tondji

Bayesian design of measurements for magnetorelaxometry imaging
T Helin, N Hyvönen, J Maaninen and J-P Puska

Support condition identification of wind turbines based on a statistical time-domain damping parameter
Yasen Liu, Jun Liang and Ying Wang

Inverse Problems, Volume 39, Number 12, December 2023, December 2023 - IOPscience

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IPI February 2024 Vol. 18, No. 1 articles:
A multi-tasking novel variational model for image decolorization and denoising
Longhui Zhang, Chang Yang, Zhichang Guo, Wenjuan Yao and Dazhi Zhang

A combined first and fractional order regularization method for mixed Poisson-white spike noisy image restoration
Suhua Wei and Linghai Kong

An inverse problem for a semi-linear wave equation: A numerical study
Matti Lassas, Tony Liimatainen, Leyter Potenciano-Machado and Teemu Tyni

Regularized full waveform inversion for low frequency ultrasound tomography with a structural similarity EIT prior
Scott Ziegler, Talles Santos and Jennifer L. Mueller

A uniqueness theorem for inverse problems in quasilinear anisotropic media II
Md Ibrahim Kholil and Ziqi Sun

Sparsity promoting reconstructions via hierarchical prior models in diffuse optical tomography
Anssi Manninen, Meghdoot Mozumder, Tanja Tarvainen and Andreas Hauptmann

Linear inverse problems with nonnegativity constraints: Singularity of optimisers
Camille Pouchol and Olivier Verdier

On the existence and uniqueness of weak solutions of a coupled diffusion system related to image restoration
Subit K. Jain, Sudeb Majee and Rajendra K. Ray

[Inverse Problems and Imaging (aimsciences.org)](#)

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