

Curriculum Vitae – Dr. Nirmal Yadav

Contact Information

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Academic Qualifications

Degree	University/Board	Subjects	Percentage/CG PA & Division	Year
Ph.D.	IIT Roorkee	Applied Mathematics (Computerized Tomography)		2014
M. Sc.	University of Rajasthan	Mathematics	74.7%, First	2008
B. Sc.	University of Rajasthan	Mathematics, Physics, Chemistry	66.81%, First	2006
12th	Rajasthan Board	Maths, Chemistry, Physics, Hindi, English	65.38%, First	2003
10th	Rajasthan Board	Maths, Science, Social Science, Hindi, English	79.67%, First	2001

Research

Thesis Title: Error Estimation of Discrete Convolution Backprojection Algorithm for Discrete Radon Transform

Supervisor: Prof. Tanuja Srivastava, Department of Mathematics, IIT Roorkee, India

Description: Computerized tomography (CT) or image reconstruction from projections is a non-invasive imaging technique to visualize internal structure of the objects from measurements taken with non-invasive methods. This technique is being applied in many fields such as electron microscopy, medical diagnosis, radio astronomy optics, geophysics etc. In medical imaging, this technique is used in diagnosis of various diseases. In non medical applications electron microscopy is used to get the reconstruction of three dimensional imaging. The CBP algorithm has been widely used in medical imaging as it is efficient, accurate and easy to implement. It gives reconstruction in function space itself and uses the projection data directly. In my work a new image reconstruction technique is introduced, which gives results much faster than CBP algorithm with projection directly calculated in discrete domain. The efficiency of algorithm is defined by error estimation for each algorithm.

Computational Skills

Operating Systems Familiarity: Windows (All versions)

Programming Languages: Matlab and Mathematica7

Programming Tools and Others: Microsoft Office (2003, 2007), LATEX

Achievements

Gate Score (Graduate Aptitude Test in Engineering):

80.99 (2009)

NET (National Eligibility Test for Teaching):

UGC-JRF

Junior Research Fellowship (UGC-JRF):

Dec. 2009 – Dec. 2012

Senior Research Fellowship (UGC-SRF):

Jan. 2012-June 2014.

Teaching Experience

Teaching Assistant- July'2010 to Dec'2013

M.Tech. & M.C.A. Tutorial: Probability and Statistics, Discrete Mathematics

B.Tech Tutorial: Engineering Mathematics.

Assistant Professor in Cluster Innovation Centre, University of Delhi- from August'2014

Membership of learned bodies:

1. Universal Association of Computer and Electronics Engineers (UACEE)-
Membership ID is **SM1005069**.
2. International Association of Engineers (IAENG) - Member No: **136111**.

Publications/Communications

- **Tanuja Srivastava and Nirmal Yadav***, “On Image Reconstruction Algorithms with Discrete Radon Transform” International Journal of Applied Mathematics and Statistics, Issue: 2013, Volume 47, Issue Number: 17.
- **Tanuja Srivastava and Nirmal Yadav**, “Error Estimation of Discrete Convolution Backprojection for Discrete Radon Transform” is accepted for publication in International Journal of Information and Communication Technology.
- **Nirmal Yadav and Tanuja Srivastava**, “Local and Global Tomographic Image Reconstruction with Discrete Radon Transform” IEEE Digital Library, 978-1-4673-4862-1/13.
- **Nirmal Yadav and Tanuja Srivastava**, “A Modified Convolution Backprojection Algorithm for Tomographic Image Reconstruction with Contourlet Transform” International Journal of Computing Science and Mathematics (Accepted for publication).
- **Nirmal Yadav and Tanuja Srivastava**, “A New Discrete Convolution Backprojection Algorithm for Fan Beam” communicated in ISRN Computation Mathematics.
- **Nirmal Yadav and Tanuja Srivastava**, “An Inverse Theorem with Experimental Study for Discrete Convolution Backprojection with Discrete Radon Transform” communicated in Inverse Problems.

Conferences

- **Nirmal Yadav and Tanuja Srivastava**, “Local and Global Tomographic Image Reconstruction with Discrete Radon Transform” International Conference on Signal Processing, Image Processing and Pattern Recognition IEEE Digital Library, 978-1-4673-4862-1/13, ICSIPR’2013.
- **Nirmal Yadav and Tanuja Srivastava**, “A New Implementation of Wavelet Transform for Reconstruction of Tomographic Images” in International Conference on Advances in Modelling, Optimization and Computing organized by Department of Mathematics, I.I.T. Roorkee Dec 5-7’ 2011.
- **Nirmal Yadav and Tanuja Srivastava**, "Error Estimation for Cone Beam Tomography" International conference on Mathematical Sciences (Published by Elsevier) Chennai. Vol. / 2014 (Accepted Paper).
- **Nirmal Yadav and Tanuja Srivastava**, “Convolution Backprojection Algorithm for Tomographic Image Reconstruction with Contourlet Transform” accepted in The Second International Conference on Engineering and Computational Mathematics (ECM2013), Hong-Kong.

Workshops

- Short Term Course on Medical Imaging and Image Analysis conducted at School Medical Science and Technology, **Indian Institute of Technology Kharagpur**.
- Advanced Instructional School on Theoretical and Numerical Aspects of Inverse Problems organized by **Tata Institute of Fundamental Research Bangalore**, during 16 June 2014 to 28 June 2014.
- National Workshop on Scientific /Research Paper Writing organized by The **National Academy of Sciences, India**.

Personal Informations

Nationality	Indian
Father's Name	Mr. Krishan Lal Yadav
Mother's Name	Mrs. Kamla Yadav
Languages	English, Hindi
Date of Birth	June 25 th
Gender	Female
Marital Status	Unmarried

References

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