Sapto W. Indratno

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Education

Ph.D. Mathematics, Kansas State University, Manhattan, Kansas, USA, 2011
Thesis: Numerical methods for solving linear ill-posed problems.
Supervisor: Prof. Alexander G. Ramm

M.Sc. Mathematics, Kansas State University, Manhattan, Kansas, USA, 2007

M.Sc. Applied Mathematics, Universiteit Twente, Enshede, The Netherlands, 2001
Thesis: Empty totes management in a baggage handling system.
Supervisors: Prof. S.M. Baas .

B.S. Mathematics, Institut Teknologi Bandung, Bandung, Indonesia, 1998

Research interests

Inverse problems, Risk modeling, Numerical analysis, Stochastic processes, Stochastic differential equations, Machine Learning, Statistical Learning Theory.

Research Experiences

Student Researcher — 2000-2001
Advisor: Prof. S.M. Baas — VanDerLande Industries, The Netherlands
Involved in research on optimization of baggage handling systems.

Student Researcher — June-August 2007
Advisor: Prof. Henry Wolcowicz — Mathematical Science Research Institute, CA, USA
Optimization on Ill-posed problems.

Professional Researcher — 2012
with Prof. Edy Soewono and Dr. Nuning Nuraeni — Institut Teknologi Bandung, Bandung, Indonesia
Dengue Modeling

Professional Researcher — 2013-2015
Astra Agro Lestari, Indonesia — ITB and Kumai, Center of Kalimantan, Indonesia
Probabilistic spatial pest infestation model for early warning system.

Professional Researcher — 2013-2014
URBANINDO, Indonesia — ITB-URBANINDO, Bandung
Developing a forecasting model for land use in Indonesia.

Professional Researcher — 2013-2014
VERITRANS, Indonesia — ITB-VERITRANS, Bandung
Developing a probabilistic model for fraud detection

Professional Researcher 2016
PT. Chevron, Indonesia Riau-ITB, Bandung
Probabilistic modeling of the oil pipeline lifetime.

Conferences attended

- Biomathematics symphosium, Bandung Institute of Technology, Indonesia, Oktober 27-29,2013.
- International Acturial Conference, Sanur Beach Hotel, Bali, Indonesia, November 10-11, 2011.
- February Fourier Talks 2011, University of Maryland, 2011
- Joint Mathematics Meetings, New Orleans, 2011.
- Eight Prairie Analysis Seminar, Kansas University, 2008
- Seventh Prairie Analysis Seminar, Kansas State University, 2007
- NSF-CBMS Regional Research Conference in Mathematical Sciences: The Interplay between Convex Geometry and Harmonic Analysis, July 29 - August 3, 2006, Kansas State University.
- The Indonesia- Japan joint conference on combinatorial geometry and graph theory, Bandung, Indonesia, September 13-16, 2003.

Talks given

- BMKG Workshop, Tangerang, Indonesia, 24-26 Oktober 2013: Copula for analysing the weather
- ICREAM 5 The 5th International Conference on Research and Education in Mathematics:Dynamical systems method for solving ill-conditioned linear algebraic systems, Bandung Institute of Technology, Bandung, Indonesia, November 22-24, 2011.
- A poster presentation at the February Fourier Talks 2011, University of Maryland: An iterative method for solving ill-posed problems in signal processing, February 17-18,2011.
- 2011 Joint Mathematics Meetings, New Orleans: Dynamical systems method for solving ill-conditioned linear algebraic systems, January 6-9, 2011.
- Tenth Prairie Analysis Seminar: Inversion of the Laplace transform with real data using an adaptive iterative method, University of Kansas, October 29-30, 2010.
- Analysis seminar: Dynamical systems method for solving ill-conditioned linear algebraic systems, Kansas State University, October 20, 2010.
- Function Theory Study Seminar: Can we represent a function harmonic in the unit disk as an integral of a function (or a measure) defined on the unit circle?, Kansas State University, September 15, 2005.
- Function Theory Study Seminar: Harmonic functions, Poisson's formula, and representation of a function harmonic in the unit disk as an integral, Kansas State University, September 8, 2005.
- Kansas State Research Forum: Dynamical Systems Method for Solving Ill-Conditioned Linear Algebraic Systems, Kansas State University, March 8, 2008.

Publications

1) S.W. Indratno and A.G. Ramm, Dynamical Systems Method for solving ill-conditioned linear algebraic systems, Int. J. of Computing Science and Mathematics, 2, N4, (2009), 308-333.
2) S.W. Indratno and A.G. Ramm, An iterative method for solving Fredholm integral equations of the first kind, Int. J. of Computing Science and Mathematics, 2, N4, (2009), 354-379.
3) S.W. Indratno and A.G. Ramm, Inversion of the Laplace transform with real data using an adaptive iterative method, Internat. Jour. Math. Math. Sci. (IJMMS) , Vol. 2009, Article 898195, 38 pages; doi:10.1155/2009/898195.

4) S.W. Indratno and A.G. Ramm, Creating materials with a desired refraction coefficient: numerical experiments, Int. J. of Computing Science and Mathematics (special issue on "Ill-Posed and Inverse Problems"), Vol.3, N1-2, (2010), 76-101.

5) S.W. Indratno and A.G. Ramm, A collocation method for solving integral equations in distributions, J. Computational and Applied Mathematics, doi: 10.1016/j.cam. 2011.08.013

6) S.W. Indratno, D. Maldonado and S. Silwal, On the axiomatic approach to Harnack's inequality in doubling quasi-metric spaces, Journal of Differential Equations,254 (2013)

7) M.I. Andriychuk, S.W. Indratno, A.G. Ramm, Electromagnetic wave scattering by a small impedance particle: theory and modeling, Optics Communications, 285, (2012), 684-1691.

8) S.W. Indratno, D. Maldonado and S. Silwal, A visual formalism for weights satisfying reverse inequalities, Expositiones Mathematicae,2013

9) Jafaruddin, Sapto W. Indratno, Nuning Nuraini, Asep K. Supriatna, and Edy Soewono, Estimation of the Basic Reproductive Ratio for Dengue Fever at the Take-Off Period of Dengue Infection,Computational and Mathematical Methods in Medicine, Volume 2015 (2015)

10) J.W. Puspita, dr. Suryani, S.W. Indratno, and E. Soewono, Bayesian Approach to Identify Spike and Sharp Waves in EEG Data of Epilepsy Patients, Biomedical Signal Processing and Control, 2017 (accepted)

Proceedings

1) Y. Syukriyah, N. Nuraini, and S. W. Indratno, Dynamic Transmission Parameter Estimation in SIR model using regularized system of linear equations, Biomath International symposium 2013, Bandung Intitute of Technology,Bandung, Indonesia (aip proceeding)

2) S.W. Indratno and A. Shabrina,Estimating dynamic transmission parameters of SIR model using Kernel-based Gaussian Processes, Biomath International symposium 2013, Bandung Intitute of Tech- nology,Bandung, Indonesia (aip proceeding)

3) Windarto, S.W. Indratno, N. Nuraini and E. Soewono, A Comparison of Binary and Continuous Genetic Algorithm in Parameter Estimation of a Dynamical Model ,Biomath International symposium 2013, Bandung Intitute of Technology,Bandung, Indonesia (aip proceeding)

Honors and Awards

1) VNO-NCW fellowship from VanDerLande industries, The Netherlands, 1999-2001.

2) L. Aileen Hostinsky Outstanding Graduate Teaching Assistant in Academics Award, Kansas state university, Manhattan, Kansas USA, 2010.

Scientific Software

C/C++, MATLAB, R