Jean Marie Linhart

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Citizenship: United States

Education

Ph.D. Mathematics, The University of Texas at Austin, 1999, adviser Lorenzo Sadun.
M.A. Mathematics, The University of Texas at Austin, 1993, adviser Karen Uhlenbeck.
B.S. Mathematics, The University of Chicago, 1990, with General Honors.

Research interests

Inverse problems
Markov Chain Monte Carlo (MCMC) sampling methods
Scientific computing

Academic and Industry Experience

2011-present Lecturer: Texas A&M University

Currently teaching Mathematical Modeling (Math 442), Engineering Calculus 2 (Math 152)

Currently course coordinator for Engineering Calculus 2 (Math 152)

2008-2011 Visiting Assistant Professor: Texas A&M University

Inverse problems research/MCMC Sampling with Wolfgang Bangerth's inverse problems group

Mentored graduate students in inverse problems

Taught: finite mathematics with TI-84 graphing calculator (Math 166), ordinary differential equations with MATLAB (Math 308), precalculus mathematics for engineers (Math 150), numerical analysis with MATLAB (Math 417), partial differential equations (Math 412), vector calculus (Math 251)

Currently teaching linear algebra (Math 304)

2002-2008 Senior Mathematician: Stata Corp LP

Researched and implemented algorithms in statistics, especially multivariate statistics

Increased accuracy and numerical stability of panel data estimators by researching and implementing adaptive quadrature

Graphics programming

Developed manual entries and a glossary for the multivariate statistics manual. Entries include methods and formulas, bibliography, worked examples

Managed a team on a tight schedule to complete GUI dialog boxes

Parallel programming with OpenMP

User support

1999-2001 Software Engineer/Image Processing Analyst: Applied Science Fiction

Optimized numerical code using SIMD extensions for Altivec
Automated process for film response modeling with splines and local regression
Automated metric calculation for film response

Summer 1996 Co-op Student: Schlumberger Well Services
1997-1999 Intern: Schlumberger Well Services

Numerical modeling: wrote Monte Carlo modeling scripts for nuclear logging tools using the MCBEND Monte Carlo modeling package

Wellsite data acquisition, algorithm implementation

Technical reports and user documentation

Migration of legacy code to modern systems

1995-1997 Teaching Assistant, Assistant Instructor, Research Assistant: The University of Texas at Austin

Teaching assistant for Vector Calculus
Teaching assistant for Business Calculus
Assistant instructor for College Algebra
Research assistant to perform numerical modeling of partial differential equations

1994-1995 Mathematics Instructor, ITT Technical Institute: Austin, TX

Instructor for Algebra 1
Instructor for Algebra 2 with Trigonometry
Instructor of the Quarter, Fall 1994

1993-1994 Computer/Mathematics Programmer: Lawrence Livermore National Laboratory

Numerical modeling: updated Fortran model of the advection-diffusion equation
Data visualization: visualized global ocean data using IDL

1990-1993 Teaching Assistant: The University of Texas at Austin

Teaching assistant for Engineering Calculus
Teaching assistant for Ordinary Differential Equations
Departmental Unix support: gave seminars, created user guides

Publications

J. M. Linhart. 2008. Algorithm 885: Computing the logarithm of the normal distribution. *ACM Transactions on Mathematical Software* **35**, Article 20 (10 pages).

J. M. Linhart. 2008. Mata Matters: Overflow, underflow and the IEEE floating-point format. *Stata Journal* **8**:255–268.

J. M. Linhart, J. S. Pitblado, J. F. Hassell. 2004. From the help desk: Kaplan-Meier plots with stsatrisk. *Stata Journal* **4**: 56–65.

R. G. Gutierrez, J. M. Linhart, J. S. Pitblado. 2003. From the help desk: Local polynomial regression and Stata plugins. *Stata Journal* **3**: 412–419.

J. M. Linhart and L. A. Sadun. 2002. Fast and slow blowup in the S^2 sigma model and (4+1)-dimensional Yang-Mills model. *Nonlinearity* 15: 219–238. Available at ftp://ftp.ma.utexas.edu/pub/papers/sadun/2001/blowup.pdf.

J. M. Linhart, 1999. Numerical Investigations singularity formation in non-linear wave equations in the adiabatic limit. Dissertation, Mathematics Department, University of Texas at Austin, Austin, TX 78712, USA. Available at http://arxiv.org/abs/math-ph/0105048.

Submitted Publications

Allmaras, et. al. 2010. Estimating parameters in physical models through Bayesian inversion: A complete example. Submitted to SIAM Review.

Research and Seminar Talks

Adaptive quadrature for panel data estimators, StataCorp LP, 2004.

Computing the Logarithm of the Normal Distribution, Numerical Analysis Seminar, Texas A&M University, 2008.

Inverse Problems and Sampling, IAMCS Postdocs Lunch, Texas A&M, 2009.

Statistical Sampling in High Dimensional Inverse Problems, American Mathematics Society Joint Mathematics Meetings, January 2010.

Statistical Sampling in High Dimensional Inverse Problems, Universität Göttingen, June 2010.

Statistical Sampling in High Dimensional Inverse Problems, deal.II Workshop, Universität Heidelberg, August 2010.

Computer languages and expertise

C/C++
Parallel programming with OpenMP
Fortran
Stata/Mata
MATLAB
Superior technical writing
IEEE 754 expert (binary floating point arithmetic standard)

Community Service

2009-present ATMentors, Mentoring of TAMU students

2007-present City of College Station Council Transportation Committee
2006-present Bicycling Advocacy Coordinator, Brazos Valley Cyclists
2004-2006 President, Brazos Valley Cyclists
2005-present League of American Bicyclists Cycling Instructor #1155

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