Jeffrey M. Hokanson

Curriculum Vitae · 31 October 2017

Department of Computer Science
University of Colorado at Boulder
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Born: 24 August 1984
U.S. Citizen
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Education

Ph.D. Computational and Applied Mathematics, Rice University, December 2013
Thesis: *Numerically Stable and Statistically Efficient Algorithms for Large Scale Exponential Fitting*
Advisors: Mark Embree and Steven Cox

M.A. Computational and Applied Mathematics, Rice University, May 2009
Thesis: *Magnetic Damping of an Elastic Conductor*
Advisors: Mark Embree and Steven Cox

B.S. Physics, Rice University, May 2007, cum laude

Appointments

Research Associate, University of Colorado at Boulder (September 2017 – present)
Advisor: Paul G. Constantine

Postdoctoral Fellow, Colorado School of Mines (October 2016 – September 2017)
Advisor: Paul G. Constantine

Postdoctoral Fellow, University of Texas MD Anderson Cancer Center (March 2014 – September 2016)

Funding

Cancer Center Support Grant: New Technology Grant PHS398
Web User Interface for High Parametric Analysis (PI)
Co-PI: Jared Burks
$30,000 (2014)

Journal Publications

Steven J. Cox, Mark Embree, and Jeffrey M. Hokanson
One can hear the composition of a string: experiments with an inverse eigenvalue problem
SIAM Review, 54 (2012) pp. 157–178

Paul G. Constantine, Armin Eftekhari, Jeffrey Hokanson, and Rachel A. Ward
A near-stationary subspace for ridge approximation
Computer Methods in Applied Mechanics and Engineering, Volume 326 (Nov 2017) pp. 402–421
arXiv:1606.01929

Jeffrey M. Hokanson
Projected nonlinear least squares for exponential fitting
accepted, SIAM Journal on Scientific Computing
arXiv:1508.05890

Submitted Manuscripts

Jeffrey M. Hokanson and Paul G. Constantine
Data-driven polynomial ridge approximation using variable projection
in revision, SIAM Journal on Scientific Computing
arXiv:1702.05859

Other Publications

Steven J. Cox, Mark Embree, Jeffrey M. Hokanson
CAAM335 Matrix Analysis: Physical Laboratory
available at: `http://www.caam.rice.edu/caam335lab`

Departmental Presentations

Fast Automatic System Identification Using Optimization
Katholieke Universiteit Leuven, 2010

Trading Statistical Efficiency for Speed in Parameter Estimation Problems
Virginia Tech, 2015

Using Projected Nonlinear Least Squares to Measure Eigenvalues
Tufts University, 2017

Conference Presentations

Fast Automatic System Identification Using Optimization
16th Congress of the International Linear Algebra Society, Pisa, Italy, 2010

CLEAN Corrects Variation in Sample Preparation
CYTO2016, Seattle, WA, 2016

Fast Minimum Uncertainty Estimates for the Exponential Fitting Problem
SIAM Annual Meeting, Boston, MA, 2016

Fast Data-Driven System Identification from Impulse Response Measurements
SIAM Conference on Computational Science and Engineering, Atlanta, GA, 2017

Projected nonlinear least squares for impulse response system identification, 3rd Annual Meeting of SIAM Central States Section, Fort Collins, CO, 2017

Data-driven polynomial ridge approximation using variable projection, 3rd Annual Meeting of SIAM Central States Section, Fort Collins, CO, 2017

Conference Posters

Speeding Large Nonlinear Least Squares Problems by Near-Optimal Data Compression
MMDS, Berkeley, CA, 2014

High Dimensional Cytometry Data Visualization Using Parallel Coordinates
CYTO2016, Seattle, WA, 2016

Data-driven Polynomial Ridge Approximation Using Variable Projection
SIAM Conference on Computational Science and Engineering, Atlanta, GA, 2017

Data-driven Polynomial Ridge Approximation Using Variable Projection
USACM Workshop on Uncertainty Quantification and Data-Driven Modeling, Austin, TX, 2017

Data-driven Polynomial Ridge Approximation Using Variable Projection
Statistical Perspectives on Uncertainty Quantification, Atlanta, GA, 2017

Teaching Experience

CAAM 335 Lab: Matrix Analysis Laboratory, Rice University
Teaching Assistant
Fall 2007, Spring 2008, Fall 2009, Spring 2010

CAAM 336: Differential Equations in Science and Engineering, Rice University
Instructor of Record
Fall 2010, Spring 2012

Mentoring

Ibrohim Nosirov, Science Fair, March 2017-present
placed 2nd in Medical and Health Science, Colorado State Science Fair, 2017

Workshops

Gene Golub SIAM Summer School, Selva di Fasano, Italy, 2010

Model Reduction of Transport-dominated Phenomena, Berlin, Germany, 2015

Other Funding

Gene Golub SIAM Summer School Travel Award, 2010

Shared Resource Lab Travel Award ($1000), 2016

USACM Travel Award ($1000), 2017

SIAM Travel Award for DR17 ($650), 2017

Service

President, Rice University SIAM Student Chapter, May 2008 – May 2009

Referee: SIAM Journal on Scientific Computing