Jeffrey M. Hokanson

Curriculum Vitae · 1 April 2018

Department of Computer Science
University of Colorado at Boulder
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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

Postdoctoral Fellow, 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

Jeffrey M. Hokanson and Paul G. Constantine
Data-driven Polynomial Ridge Approximation Using Variable Projection
accepted, SIAM Journal on Scientific Computing
arXiv:1702.05859

Jeffrey M. Hokanson
Projected Nonlinear Least Squares for Exponential Fitting
SIAM Journal on Scientific Computing, Volume 39 No. 6 (2017) pp. A3107–A3128
arXiv:1508.05890

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

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

Submitted Manuscripts

Jeffrey M. Hokanson
A Data-Driven McMillan Degree Lower Bound
arXiv:1803.00043

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

Exploiting Ridge Structure in Chance-Constrained Design Under Uncertainty
Stanford, 2017

Exploiting Ridge Structure in Chance-Constrained Design Under Uncertainty
Sandia National Labs, 2017

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

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

Fast Automatic System Identification Using Optimization
Katholieke Universiteit Leuven, 2010

Conference Presentations

Data-driven Polynomial Ridge Approximation Using Variable Projection,
15th Copper Mountain Conference on Iterative Methods, Copper Mountain, CO, 2018

Data-driven Polynomial Ridge Approximation Using Variable Projection,
3rd Annual Meeting of SIAM Central States Section, Fort Collins, CO, 2017

Projected Nonlinear Least Squares for Impulse Response System Identification, 3rd Annual Meeting of SIAM Central States Section, Fort Collins, CO, 2017

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

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

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

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

Conference Posters

Data-driven Polynomial Ridge Approximation Using Variable Projection
Conference on Data Analysis (CoDA), Santa Fe, NM, 2018

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

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

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

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

References

Mark Embree, Virginia Tech, `embree@vt.edu`

Paul Constantine, University of Colorado at Boulder, `Paul.Constantine@colorado.edu`

Mike Wakin, Colorado School of Mines, `mwakin@mines.edu`