

**Jeffrey M. Hokanson**  
Curriculum Vitae · 1 March 2018

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**Education**

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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

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**Appointments**

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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)

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**Funding**

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

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**Journal Publications**

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4. Jeffrey M. Hokanson and Paul G. Constantine  
*Data-driven Polynomial Ridge Approximation Using Variable Projection*  
accepted, SIAM Journal on Scientific Computing  
arXiv:1702.05859
3. 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
2. 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
1. 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

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

### Other Publications

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

### Invited Talks

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5. *Exploiting Ridge Structure in Chance-Constrained Design Under Uncertainty*  
Stanford, 2017
4. *Exploiting Ridge Structure in Chance-Constrained Design Under Uncertainty*  
Sandia National Labs, 2017
3. *Using Projected Nonlinear Least Squares to Measure Eigenvalues*  
Tufts University, 2017
2. *Trading Statistical Efficiency for Speed in Parameter Estimation Problems*  
Virginia Tech, 2015
1. *Fast Automatic System Identification Using Optimization*  
Katholieke Universiteit Leuven, 2010

### Conference Presentations

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8. *Exploiting Ridge Structure in Bayesian Inference*,  
SIAM UQ18, Orange County, CA, 2018
7. *Data-driven Polynomial Ridge Approximation Using Variable Projection*,  
15th Copper Mountain Conference on Iterative Methods, Copper Mountain, CO, 2018
6. *Data-driven Polynomial Ridge Approximation Using Variable Projection*,  
3rd Annual Meeting of SIAM Central States Section, Fort Collins, CO, 2017
5. *Projected Nonlinear Least Squares for Impulse Response System Identification*, 3rd Annual Meeting of  
SIAM Central States Section, Fort Collins, CO, 2017
4. *Fast Data-Driven System Identification from Impulse Response Measurements*  
SIAM Conference on Computational Science and Engineering, Atlanta, GA, 2017
3. *Fast Minimum Uncertainty Estimates for the Exponential Fitting Problem*  
SIAM Annual Meeting, Boston, MA, 2016
2. *CLEAN Corrects Variation in Sample Preparation*  
CYTO2016, Seattle, WA, 2016
1. *Fast Automatic System Identification Using Optimization*  
16th Congress of the International Linear Algebra Society, Pisa, Italy, 2010

## Conference Posters

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7. *Exploiting Ridge Structure in Chance Constrained Design Under Uncertainty*  
SIAM UQ18, Orange County, CA, 2018
6. *Data-driven Polynomial Ridge Approximation Using Variable Projection*  
Conference on Data Analysis (CoDA), Santa Fe, NM, 2018
5. *Data-driven Polynomial Ridge Approximation Using Variable Projection*  
Statistical Perspectives on Uncertainty Quantification, Atlanta, GA, 2017
4. *Data-driven Polynomial Ridge Approximation Using Variable Projection*  
USACM Workshop on Uncertainty Quantification and Data-Driven Modeling, Austin, TX, 2017
3. *Data-driven Polynomial Ridge Approximation Using Variable Projection*  
SIAM Conference on Computational Science and Engineering, Atlanta, GA, 2017
2. *High Dimensional Cytometry Data Visualization Using Parallel Coordinates*  
CYTO2016, Seattle, WA, 2016
1. *Speeding Large Nonlinear Least Squares Problems by Near-Optimal Data Compression*  
MMDS, Berkeley, CA, 2014

## Teaching Experience

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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

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Ibrohim Nosirov, Science Fair, March 2017-present

placed 2nd in Medical and Health Science, Colorado State Science Fair, 2017

## Workshops

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

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

## Other Funding

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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

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

Referee: SIAM Journal on Scientific Computing

## References

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Mark Embree, Virginia Tech, [embree@vt.edu](mailto:embree@vt.edu)

Paul Constantine, University of Colorado at Boulder, [Paul.Constantine@colorado.edu](mailto:Paul.Constantine@colorado.edu)

Mike Wakin, Colorado School of Mines, [mwakin@mines.edu](mailto:mwakin@mines.edu)