

Chinmay Hegde

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Research Interests

Data Analytics
Machine Learning
Signal Processing
Design and Analysis of Algorithms

Education

- 2012** Ph.D. in Electrical and Computer Engineering, Rice University
Advisor: Richard G. Baraniuk
Thesis: "Nonlinear Signal Models: Geometry, Analysis, and Algorithms"
Winner of 2013 Ralph Budd Award for Best Thesis in School of Engineering
- 2010** M.S. in Electrical and Computer Engineering, Rice University
- 2006** B.Tech. in Electrical Engineering, Indian Institute of Technology Madras

Positions

- | | | |
|----------------|--|-------------------------------|
| 2015- | Iowa State University, ECpE Department | Assistant Professor |
| 2017-20 | Iowa State University, College of Engineering | Black & Veatch Faculty Fellow |
| 2012-15 | Massachusetts Institute of Technology, CSAIL | Postdoctoral Associate |
| 2014-15 | Massachusetts Institute of Technology, EECS Department | Instructor |
| 2011 | Mitsubishi Electric Research Labs (MERL) | Summer Intern |
| 2006-12 | Rice University | Graduate Research Assistant |
| 2005 | Ittiam Systems Pvt. Ltd. | Summer Intern |

Honors and Awards

- 2018** NSF CAREER Award
- 2017** Black & Veatch Building a World of Difference Faculty Fellowship
- 2017** Best Poster Award, Midwest Machine Learning Symposium (MMLS)
- 2016** NSF CISE Research Initiation Initiative (CRII) Award

2016	Warren B. Boast Undergraduate Teaching Award
2015	Best Paper Award, International Conference on Machine Learning (ICML)
2013	Ralph Budd Award for Best Thesis in the School of Engineering, Rice University
2010	Robert L. Patten Award for university service, Rice University
2009	Best Student Paper Award, SPARS Workshop
2006-12	Rice University Fellowship
2002-03	National Board of Higher Mathematics (NBHM) Fellowship, India
2002	Gold Medal, Indian National Physics Olympiad
2001,02	Certificate of Distinction, Indian National Mathematics Olympiad
2001	Certificate of Distinction, Indian National Astronomy Olympiad
2000-02	Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship, India
2000	National Talent Search Exam (NTSE) Scholarship, India

Publications

Google Scholar metrics (January 2018): 2408 citations, H-index=17, i10-index=22.

Thesis

C. Hegde. *Nonlinear Signal Models: Geometry, Algorithms, and Analysis*. PhD thesis, ECE Department, Rice University, Sept. 2012. ***Ralph Budd Award for Best Thesis in School of Engineering.***

Journal Articles

M. Soltani and C. Hegde. Fast algorithms for demixing signals from nonlinear observations. *IEEE Trans. Sig. Proc.*, 65(16):4209–4222, Aug. 2017.

C. Hegde, A. Sankaranarayanan, W. Yin, and R. Baraniuk. NuMax: A convex approach for learning near-isometric linear embeddings. *IEEE Trans. Sig. Proc.*, 63(22):6109–6121, Nov. 2015.

C. Hegde, P. Indyk, and L. Schmidt. Fast algorithms for structured sparsity. *Bulletin of the EATCS*, 1(117):197–228, Oct. 2015.

C. Hegde, P. Indyk, and L. Schmidt. Approximation algorithms for model-based compressive sensing. *IEEE Trans. Inform. Theory*, 61(9):5129–5147, Sept. 2015.

Y. Li, C. Hegde, A. Sankaranarayanan, R. Baraniuk, and K. Kelly. Compressive image classification via secant projections. *J. Optics*, 17(6), June 2015.

S. Nagaraj, C. Hegde, A. Sankaranarayanan, and R. Baraniuk. Optical flow-based transport for image manifolds. *Appl. Comput. Harmon. Anal.*, 36(2):280–301, March 2014.

C. Hegde and R. Baraniuk. Signal recovery on incoherent manifolds. *IEEE Trans. Inform. Theory*, 58(12):7204–7214, Dec. 2012.

C. Hegde and R. Baraniuk. Sampling and recovery of pulse streams. *IEEE Trans. Sig. Proc.*, 59(4):1505–1517, Apr. 2011.

M. Davenport, C. Hegde, M. Duarte, and R. Baraniuk. Joint manifolds for data fusion. *IEEE Trans. Image Proc.*, 19(10):2580–2594, Oct. 2010.

R. Baraniuk, V. Cevher, M. Duarte, and C. Hegde. Model-based compressive sensing. *IEEE Trans. Inform. Theory*, 56(4):1982–2001, Apr. 2010.

Conference Proceedings

- G. Jagatap and C. Hegde. Towards sample-optimal methods for solving random quadratic equations with structure. In *Proc. IEEE Int. Symp. Inform. Theory (ISIT)*, June 2018.
- M. Soltani and C. Hegde. Fast low-rank matrix estimation for ill-conditioned matrices. In *Proc. IEEE Int. Symp. Inform. Theory (ISIT)*, June 2018.
- V. Shah and C. Hegde. Solving linear inverse problems using gan priors: An algorithm with provable guarantees. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Apr. 2018.
- Z. Chen, G. Jagatap, S. Nayer, C. Hegde, and N. Vaswani. Low rank fourier ptychography. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Apr. 2018.
- G. Jagatap, Z. Chen, C. Hegde, and N. Vaswani. Fourier ptychography using structured sparsity. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Apr. 2018.
- M. Soltani and C. Hegde. Towards provable learning of polynomial neural networks using low-rank matrix estimation. In *Proc. Intl. Conf. Artificial Intelligence and Statistics (AISTATS)*, Apr. 2018.
- T. Nguyen, R. Wong, and C. Hegde. A provable approach for double-sparse coding. In *Proc. AAAI Conf. Artificial Intelligence*, Feb. 2018.
- G. Jagatap and C. Hegde. Fast sample-efficient algorithms for structured phase retrieval. In *Adv. Neural Inf. Proc. Sys. (NIPS)*, Dec. 2017.
- Z. Jiang, A. Balu, C. Hegde, and S. Sarkar. Collaborative deep learning over fixed topology networks. In *Adv. Neural Inf. Proc. Sys. (NIPS)*, Dec. 2017.
- A. Balu, T. Nguyen, A. Kokate, C. Hegde, and S. Sarkar. A forward-backward approach for visualizing information flow in deep networks. In *Proc. NIPS Symposium on Interpretability for Machine Learning*, Dec. 2017.
- P. Chakraborty, C. Hegde, and A. Sharma. Trend filtering in network time series with applications to traffic incident detection. In *Proc. NIPS Time Series Workshop (TSW)*, Dec. 2017.
- M. Cohen, C. Hegde, S. Jegelka, and L. Schmidt. Efficiently optimizing over (non-convex) cones via approximate projections. In *Proc. NIPS Workshop on Optimization for Machine Learning (OPT)*, Dec. 2017.
- C. Hubbard and C. Hegde. Parallel computing heuristics for matrix completion. In *Proc. IEEE Global Conf. Signal and Image Processing (GlobalSIP)*, Nov. 2017.
- M. Soltani and C. Hegde. Demixing structured superposition signals from periodic and aperiodic nonlinearities. In *Proc. IEEE Global Conf. Signal and Image Processing (GlobalSIP)*, Nov. 2017.
- C. Hegde. Learning graph evolutions from cut sketches: Faster algorithms, fewer samples. In *Proc. Asilomar Conf. Sig. Sys. Comput.*, Nov. 2017.
- V. Shah, M. Soltani, and C. Hegde. Reconstruction from periodic nonlinearities, with applications to HDR imaging. In *Proc. Asilomar Conf. Sig. Sys. Comput.*, Nov. 2017.
- M. Soltani and C. Hegde. Fast algorithms for learning latent variables in graphical models. In *Proc. ACM KDD Workshop on Mining and Learning with Graphs (KDD MLG)*, Aug. 2017.
- B. Wang, C. Gan, J. Yang, C. Hegde, and J. Wu. Graph-based multiple-line outage identification in power transmission systems. In *IEEE Power and Engineering Systems General Meeting (PES)*, Jul. 2017.
- M. Soltani and C. Hegde. Stable recovery of sparse vectors from random sinusoidal feature maps. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Mar. 2017.
- C. Hegde, P. Indyk, and L. Schmidt. Fast recovery from a union of subspaces. In *Adv. Neural Inf. Proc. Sys. (NIPS)*, Dec. 2016.
- M. Soltani and C. Hegde. Iterative thresholding for demixing structured superpositions in high dimensions. In *Proc. NIPS Workshop on Learning in High Dimensions with Structure (LHDS)*, Dec. 2016.

- M. Soltani and C. Hegde. A fast iterative algorithm for demixing sparse signals from nonlinear observations. In *Proc. IEEE Global Conf. Signal and Image Processing (GlobalSIP)*, Dec. 2016.
- M. Soltani and C. Hegde. Demixing sparse signals from nonlinear observations. In *Proc. Asilomar Conf. Sig. Sys. Comput.*, Nov. 2016.
- C. Hubbard, J. Bavslık, C. Hegde, and C. Hu. Data-driven prognostics of lithium-ion rechargeable battery using bilinear kernel regression. In *Annual Conf. Prognostics and Health Management (PHM)*, Oct. 2016.
- C. Hegde, P. Indyk, and L. Schmidt. Nearly linear-time algorithms for graph-structured sparsity. In *Proc. Intl. Joint Conf. Artificial Intelligence (IJCAI)*, Best Paper Awards Track, July 2016.
- C. Hegde. A fast algorithm for demixing signals with structured sparsity. In *Proc. Intl. Conf. Sig. Proc. Comm. (SPCOM)*, June 2016.
- C. Hegde. Bilevel feature selection in nearly-linear time. In *Proc. Stat. Sig. Proc. (SSP)*, June 2016.
- C. Hegde, P. Indyk, and L. Schmidt. A nearly linear-time framework for graph-structured sparsity. In *Proc. Int. Conf. Machine Learning (ICML)*, July 2015. **Best Paper Award.**
- J. Acharya, I. Diakonikolas, C. Hegde, J. Li, and L. Schmidt. Fast and near-optimal algorithms for approximating distributions by histograms. In *Proc. Symp. Principles of Database Systems (PODS)*, May 2015.
- M. Araya-Polo, C. Hegde, P. Indyk, and L. Schmidt. Greedy strategies for data-adaptive shot selection. In *Proc. Annual EAGE Meeting*, May 2015.
- L. Schmidt, C. Hegde, P. Indyk, L. Lu, X. Chi, and D. Hohl. Seismic feature extraction using Steiner tree methods. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, Apr. 2015.
- C. Hegde, P. Indyk, and L. Schmidt. Nearly linear-time model-based compressive sensing. In *Proc. Intl. Colloquium on Automata, Languages, and Programming (ICALP)*, July 2014.
- C. Hegde, P. Indyk, and L. Schmidt. A fast approximation algorithm for tree-sparse recovery. In *Proc. IEEE Int. Symp. Inform. Theory (ISIT)*, June 2014.
- Y. Li, C. Hegde, and K. Kelly. Object tracking via compressive sensing. In *Proc. Comput. Optical Sensing and Imaging (COSI)*, June 2014.
- C. Hegde, A. Sankaranarayanan, and R. Baraniuk. Lie operators for compressive sensing. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, May 2014.
- L. Schmidt, C. Hegde, P. Indyk, J. Kane, L. Lu, and D. Hohl. Automatic fault localization using the Generalized Earth Movers Distance. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, May 2014.
- C. Hegde, P. Indyk, and L. Schmidt. Approximation-tolerant model-based compressive sensing. In *Proc. ACM Symp. Discrete Alg. (SODA)*, Jan. 2014.
- E. Grant, C. Hegde, and P. Indyk. Nearly optimal linear embeddings into very low dimensions. In *Proc. IEEE Global Conf. Signal and Image Processing (GlobalSIP)*, Dec. 2013.
- C. Hegde, A. Sankaranarayanan, and R. Baraniuk. Learning measurement matrices for redundant dictionaries. In *Proc. Work. Struc. Parc. Rep. Adap. Signaux (SPARS)*, July 2013.
- L. Schmidt, C. Hegde, and P. Indyk. The Constrained Earth Movers Distance model, with applications to compressive sensing. In *Proc. Sampling Theory and Appl. (SampTA)*, July 2013.
- Y. Li, C. Hegde, R. Baraniuk, and K. Kelly. Compressive classification via secant projections. In *Proc. Comput. Optical Sensing and Imaging (COSI)*, June 2013.
- D. Grady, M. Moll, C. Hegde, A. Sankaranarayanan, R. Baraniuk, and L. Kavraki. Multi-robot target verification with reachability constraints. In *Proc. IEEE Int. Symp. on Safety, Security, and Rescue Robotics (SSRR)*, Nov. 2012.
- D. Grady, M. Moll, C. Hegde, A. Sankaranarayanan, R. Baraniuk, and L. Kavraki. Multi-objective sensor replanning for a car-like robot. In *Proc. IEEE Int. Symp. on Safety, Security, and Rescue Robotics (SSRR)*, Nov. 2012.

- C. Hegde, A. Sankaranarayanan, and R. Baraniuk. Near-isometric linear embeddings of manifolds. In *Proc. Stat. Sig. Proc. (SSP)*, Aug. 2012.
- C. Hegde and R. Baraniuk. SPIN: Iterative signal recovery on incoherent manifolds. In *Proc. IEEE Int. Symp. Inform. Theory (ISIT)*, July 2012.
- A. Sankaranarayanan, C. Hegde, S. Nagaraj, and R. Baraniuk. Go with the flow: Optical flow-based transport operators for image manifolds. In *Proc. Allerton Conf. on Comm., Contr., and Comp.*, Sept. 2011.
- D. Grady, M. Moll, C. Hegde, A. Sankaranarayanan, R. Baraniuk, and L. Kavraki. Look before you leap: Predictive sensing and opportunistic navigation. In *Proc. IROS Workshop on Open Prob. Motion Plan.*, Sept. 2011.
- M. Davenport, C. Hegde, M. Duarte, and R. Baraniuk. High-dimensional data fusion via joint manifold learning. In *Proc. AAAI Fall Symp. on Manifold Learning*, Nov. 2010.
- C. Hegde and R. Baraniuk. Compressive sensing of a superposition of pulses. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, March 2010.
- S. Schnelle, J. Laska, C. Hegde, M. Duarte, M. Davenport, and R. Baraniuk. Texas hold 'em algorithms for distributed compressive sensing. In *Proc. IEEE Int. Conf. Acoust., Speech, and Signal Processing (ICASSP)*, March 2010.
- C. Hegde and R. Baraniuk. Compressive sensing of streams of pulses. In *Proc. Allerton Conf. on Comm., Contr., and Comp.*, Sept. 2009.
- V. Cevher, P. Indyk, C. Hegde, and R. Baraniuk. Recovery of clustered sparse signals from compressive measurements. In *Proc. Sampling Theory and Appl. (SampTA)*, May 2009.
- C. Hegde, M. Duarte, and V. Cevher. Compressive sensing recovery of spike trains using a structured sparsity model. In *Proc. Work. Struc. Parc. Rep. Adap. Signaux (SPARS)*, Apr. 2009. **Best Student Paper Award.**
- M. Duarte, C. Hegde, V. Cevher, and R. Baraniuk. Recovery of compressible signals from unions of subspaces. In *Proc. IEEE Conf. Inform. Science and Systems (CISS)*, March 2009.
- V. Cevher, M. Duarte, C. Hegde, and R. Baraniuk. Sparse signal recovery using Markov Random Fields. In *Adv. Neural Inf. Proc. Sys. (NIPS)*, Dec. 2008.
- M. Davenport, C. Hegde, M. Wakin, and R. Baraniuk. Manifold-based approaches for improved classification. In *Proc. NIPS Workshop on Topology Learning*, Dec. 2007.
- C. Hegde, M. Davenport, M. Wakin, and R. Baraniuk. Efficient machine learning using random projections. In *Proc. NIPS Workshop on Efficient Machine Learning*, Dec. 2007.
- C. Hegde, M. Wakin, and R. Baraniuk. Random projections for manifold learning. In *Adv. Neural Inf. Proc. Sys. (NIPS)*, Dec. 2007.

Under Review

- M. Soltani and C. Hegde. Provable algorithms for learning two-layer polynomial neural networks. Preprint, Jan. 2018.
- T. Nguyen, R. Wong, and C. Hegde. A provable approach for double-sparse coding. Preprint, available online at <https://arxiv.org/abs/1711.03638>, Nov. 2017.
- M. Soltani and C. Hegde. Fast low-rank matrix estimation without the condition number. Preprint, Dec. 2017.
- G. Jagatap and C. Hegde. Sample-efficient algorithms for recovering structured signals from magnitude-only measurements. Available online at <http://arxiv.org/abs/1705.06412>, Nov. 2017.

Books and Monographs

- C. Hegde and A. Kamal. Theoretical foundations of computer engineering. Monograph available online, June 2017.
- C. Hegde. Lecture notes on data analytics. Monograph available online, June 2017.
- R. Baraniuk, M. Davenport, M. Duarte, and C. Hegde. *An Introduction to Compressive Sensing*. Connexions e-textbook, 2011.

Technical Reports

- C. Hubbard and C. Hegde. GPUFish: A parallel computing framework for matrix completion from a few observations. Technical report, Iowa State University, December 2016.
- C. Hegde. Bilevel feature selection in nearly-linear time. Preprint, 2016.
- C. Hegde, A. Sankaranarayanan, and R. Baraniuk. Learning manifolds in the wild. Preprint, July 2012.
- C. Hegde, P. Indyk, and L. Schmidt. A fast adaptive variant of the GW algorithm for the Prize-Collecting Steiner Tree problem. DIMACS Workshop, Dec. 2014.
- C. Hegde, O. Tuzel, and F. Porikli. Efficient upsampling of natural images. MERL Technical Report, March 2012.
- M. Davenport, C. Hegde, M. Duarte, and R. Baraniuk. A theoretical analysis of joint manifolds. Technical Report TREE0901, Rice University ECE Department, Jan. 2009.
- C. Hegde, M. Wakin, and R. Baraniuk. Random projections for manifold learning: Proofs and analysis. Technical Report TREE-0710, Rice Univ., ECE Dept., Dec. 2007.

Patents

- O. Tuzel, F. Porikli, and C. Hegde, “Upscaling Natural Images”, US Patent No. 8,620,073, December 2013.

Invited Presentations

- “A Theoretical Framework for Learning Polynomial Neural Networks”, Midwest Machine Learning Symposium, Chicago IL, June 2018.
- “Provably Accurate Double-Sparse Coding”, Information Theory and Applications Workshop, San Diego CA, February 2018.
- “The Curse of Dimensionality”, Big Data Seminar Series, Iowa State University, November 2017.
- “Phase Retrieval: Challenges, Solutions, and Applications”, Department of Mathematics Seminar, Iowa State University, October 2017.
- “Fast(er) Algorithms for Machine Learning in High Dimensions”, Department of Statistics Seminar, Iowa State University, September 2017.
- “Fast Algorithms for Learning Latent Variables in Graphical Models”, ACM KDD Mining and Learning with Graphs Workshop (spotlight presentation), Halifax NS, August 2017.
- “Fast(er) Algorithms for Machine Learning in High Dimensions”, The Alan Turing Institute, London UK, August 2017.
- “Phase Retrieval with Structured Sparsity”, International Linear Algebra Society (ILAS) Conference, Ames IA, July 2017.
- “SVD-free Algorithms for Low-Rank Matrix Recovery”, SIAM Conference on Optimization, Vancouver BC, Canada, May 2017.

“Stable Inversion of (Certain) Periodic Random Feature Maps”, Information Theory and Applications Workshop, San Diego CA, February 2017.

“Iterative Thresholding for Demixing Structured Superpositions in High Dimensions”, NIPS Workshop on Learning in High Dimensions, Barcelona, Spain, December 2016.

“A Fast Algorithm for Demixing Signals with Structured Sparsity”, International Conference on Signal Processing and Communications, Bangalore, India, June 2016.

“Nearly Linear-Time Algorithms for Structured Sparsity”, Information Theory and Applications Workshop, San Diego CA, February 2016.

“Learning Structured Sparse Representations Using Approximation”, Joint Mathematics Society, Special Session on “Analysis, Geometry, and Data”, Seattle WA, January 2016.

“Fast Algorithms for Structured Sparsity”, EE Seminar, Indian Institute of Technology Bombay, Mumbai, India, October 2015.

“Fast Algorithms for Structured Sparsity”, ECE Seminar, Indian Institute of Science, Bangalore, India, October 2015.

“Fast Algorithms for Structured Sparsity”, Computer Science Colloquium, Iowa State University, Ames IA, September 2015.

“Nearly Linear-Time Algorithms for Structured Sparsity”, International Symposium on Mathematical Programming (ISMP), Pittsburgh PA, July 2015.

“The Power of Structured Sparsity in Data Acquisition and Analysis”, ECE Seminar, Ohio State University, Columbus OH, April 2015.

“The Power of Structured Sparsity in Data Acquisition and Analysis”, ECpE Seminar, Iowa State University, Ames IA, March 2015.

“Structured Sparsity: Models, Algorithms, and Applications”, ECE Seminar, University of Illinois, Chicago IL, March 2015.

“Structured Sparsity: Models, Algorithms, and Applications”, EECS Seminar, Washington State University, Pullman WA, February 2015.

“Structured Sparsity: Models, Algorithms, and Applications”, EECS Seminar, University of California, Irvine CA, February 2015.

“Nearly Linear-Time Algorithms for Structured Sparsity”, ECE Seminar, Rice University, Houston TX, October 2014.

“Nearly Linear-Time Algorithms for Structured Sparsity”, ECE Seminar, University of Massachusetts, Amherst MA, October 2014.

“Linear Dimensionality Reduction of Large-Scale Datasets”, PED Seminar Series, MIT Lincoln Laboratory, Lexington MA, March 2014.

“Approximation Algorithms for Structured Sparse Recovery”, INFORMS Optimization Society Conference, Houston TX, March 2014.

“Approximation-Tolerant Model-Based Compressive Sensing”, EIS Seminar, Carnegie Mellon University, Pittsburgh PA, November 2013.

“Approximation-Tolerant Model-Based Compressive Sensing”, CSIP Seminar, Georgia Institute of Technology, Atlanta GA, October 2013.

“Sparse Modeling Techniques for Geological Exploration”, Hunters Network Meeting, Massachusetts Institute of Technology, Cambridge MA, August 2013.

“A Convex Approach for Designing Good Linear Embeddings”, Workshop on Sparse Fourier Transform etc., Massachusetts Institute of Technology, Cambridge MA, February 2013.

“Geometric Models for Signal Acquisition and Processing”, University of Wisconsin, Madison WI, May 2012.

“Near-Isometric Linear Embeddings of Manifolds”, KECOM Workshop, The Ohio State University, Columbus OH, May 2012.

“A Geometric Approach for Compressive Sensing”, Shell Bellaire Technology Center, Houston TX, April 2012.

“Geometric Signal Models for Compressive Sensing”, Mitsubishi Electric Research Labs, Cambridge MA, June 2011.

“Random Projections for Manifold Learning”, IMA Workshop on Multi-Manifold Data Modeling, Minneapolis MN, October 2008.

Teaching Experience

At ISU

Spring 2018 EE 525X: Principles of Data Analytics for ECpE Professor Iowa State University

Spring 2018 CprE 310: Theoretical Foundations of Computer Eng. Professor Iowa State University

Fall 2017 CprE 310: Theoretical Foundations of Computer Eng. Professor (Evaluation: 4.4 (mean)) Iowa State University

Spring 2017 EE 525X: Principles of Data Analytics for ECpE Professor (Evaluation: 4.8 (mean)) Iowa State University

Fall 2016 CprE 310: Theoretical Foundations of Computer Eng. Professor (Evaluation: 4.4/5 (mean)) Iowa State University

Spring 2016 EE 525X: Principles of Data Analytics for ECpE Professor (Evaluation: 4.7/5 (mean)) Iowa State University

Fall 2015 EE 324: Signals and Systems II Professor (Evaluation: 4.8/5 (mean)) Iowa State University

Pre-ISU

Spring 2015 6.006: Introduction to Algorithms Instructor Massachusetts Institute of Technology

Spring 2014 6.042: Mathematics for Computer Science Instructor Massachusetts Institute of Technology

Summer 2010 Summer School on Image Analysis Teaching Assistant Park City Mathematical Institute

2007-2011 ELEC 301, ELEC431, ELEC 531 Graduate Course Assistant Rice University

Student Supervision

Graduate Students

[current]

Mohammadreza Soltani (PhD Student, Jan 2016-present)

Gauri Jagatap (PhD Student, August 2016-present)

Viraj Shah (PhD Student, August 2016-present)

Thanh Nguyen (PhD Student, August 2016-present)

[graduated]

Charlie Hubbard (MS Student, May 2016-Dec 2017; First position: Hy-Vee Data Science Division)

Shen Fu (MS Student, co-advised with Prof. Daji Qiao, August 2016-Dec 2017)

Manaswi Podduturi (MS Student, May 2016-Feb 2018; First position: Kingland Analytics)

Professional Activities

Organizing Committee

2018 Midwest Big Data Summer School

2017 Midwest Big Data Summer School

Conference Session Chair

2017 IEEE GlobalSIP 2017

2017 Asilomar Conference on Signals, Systems, and Computers

2016 International Conference on Signal Processing and Communications (SPCOM)

Proposal Reviewer

2017 Society for Industrial and Applied Mathematics (SIAM)

2017 Israeli Science Foundation (ISF)

2016 German-Israeli Foundation for Scientific Research and Development

Technical Program Committees

2018 International Conference on Machine Learning (ICML)

2018 IEEE International Conference on Computational Photography (ICCP)

2018 International Conference on Signal Processing and Communications (SPCOM)

2016 International Conference on Artificial Intelligence and Statistics (AISTATS)

2016 International Conference on Signal Processing and Communications (SPCOM)

2015 International Joint Conferences on Artificial Intelligence (IJCAI) - ML Track

2013 IEEE GlobalSIP Symposium on New Sensing and Statistical Inference Methods

Reviewer

Artificial Intelligence and Statistics (AISTATS)
ACM-SIAM Symposium on Discrete Algorithms (SODA)
ACM Symposium on Principles of Distributed Computing (PODC)
Applied Computational and Harmonic Analysis
European Symposium on Algorithms (ESA)
EURASIP Journal on Advances in Signal Processing
IEEE Conference on Acoustics, Speech and Signal Processing (ICASSP)
IEEE Conference on Information Processing and Sensor Networks (IPSN)
IEEE International Symposium on Information Theory (ISIT)
IEEE Journal on Selected Topics in Signal Processing
IEEE Signal Processing Letters
IEEE Signal Processing Magazine
IEEE Transactions on Cyber-Physical Systems
IEEE Transactions on Geoscience and Remote Sensing
IEEE Transactions on Information Theory
IEEE Transactions on Image Processing
IEEE Transactions on Knowledge and Data Engineering
IEEE Transactions on Pattern Analysis and Machine Intelligence
IEEE Transactions on Robotics
IEEE Transactions on Signal Processing
IEEE Transactions on Systems, Man and Cybernetics
IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Processing
International Conference on Learning Representations (ICLR)
International Conference on Machine Learning (ICML)
International Journal on Applied Control and Signal Processing
Journal of Computational and Graphical Statistics
Journal of Optics
Neural Information Processing Systems (NIPS)
Neural Computation (NECO)
Pattern Recognition
Sampling Theory and Applications (SampTA)
SIAM Journal on Computing
SIAM Journal on Imaging Sciences
Signal Processing with Adaptive Sparse Structured Representations (SPARS)
Symposium on Theoretical Aspects of Computer Science (STACS)

Affiliations

- 2012-** Member, IEEE
- 2013-** Member, IEEE Signal Processing Society
- 2010-2011** Student member, AAAI
- 2007-2012** Student member, IEEE

University Service

At ISU

- 2016-** ECE representative, University Honors Committee
- 2016-2017** CoE representative, Data Science Minor Committee
- 2016-** Member, ECpE Graduate Admissions Committee
- 2016-** Member, Promotion and Tenure Review Committee
- 2016** Member, ABET Accreditation Subcommittee
- 2015-2016** Member, ECpE Faculty Search Committee
- 2015** Member, Senior Design Committee
- 2015-** Participant, EE/CprE 294 (Program Discovery)
- 2015-** Participant, EE/CprE 394 (Program Exploration)
- 2015-** Participant, Take Your Professor to Lunch (TYPTL) Program

Pre-ISU

- 2008-2009** President, Indian Students at Rice (ISAR)
- 2009-2010** Representative, Graduate Students Association (GSA), Rice University
- 2008-2010** Graduate Mentor, ECE Department, Rice University