GAUTAM DASARATHY — CURRICULUM VITAE

CONTACT INFORMATION

Goldwater Center, Room 324
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RESEARCH INTERESTS

Machine learning, Statistics, Signal Processing, Networked Systems, and Information Theory

EDUCATION

Ph.D., Electrical Engineering, Aug '14
Department of Electrical and Computer Engineering
University of Wisconsin - Madison
Thesis: Data Efficient and Robust Algorithms for Reconstructing Large Graphs
Advisors: Dr. Robert Nowak and Dr. Stark Draper

M.S., Electrical Engineering, May '10
Electrical and Computer Engineering
University of Wisconsin - Madison
Advisors: Dr. Robert Nowak and Dr. Stark Draper

B.Tech., Electronics and Communication Engineering May '08
VIT University, Vellore, Tamil Nadu, India
(Graduated First Class with Distinction)

PROFESSIONAL EXPERIENCE

Assistant Professor Aug '18 to Present
School of Electrical, Computer, and Energy Engineering
Arizona State University

Post-Doctoral Fellow Aug '16 to Aug '18
Department of Electrical and Computer Engineering
Rice University
Host: Dr. Richard Baraniuk

Post-Doctoral Fellow Aug '14 to Aug '16
Machine Learning Department
Carnegie Mellon University
Host: Dr. Aarti Singh

Graduate Research Assistant May '09 to Aug '14
Department of Electrical and Computer Engineering
University of Wisconsin - Madison
Advisors: Dr. Robert Nowak, and Dr. Stark Draper

Research Intern May '10 to Sept. '10
Mistubishi Electric Research Laboratories (MERL)
Cambridge, MA
Host: Dr. Mathew Brand

Project Assistant Oct. '08 to Feb. '09
Waisman Lab for Brain Imaging and Behavior
University of Wisconsin - Madison

JOURNAL & JOURNAL-STYLE CS CONFERENCE PAPERS

1. Kandaswamy, K., Dasarathy, G., Oliva, J., Schneider, J., Poczos, B., *Multi-fidelity Gaussian Process Bandit Optimisation*. Journal of Artificial Intelligence Research (JAIR), [*to appear*]

2. Mousavi, A., Dasarathy, G., Baraniuk, R., *A Data-Driven and Distributed Approach to Sparse Signal Representation and Recovery*. International Conference on Learning Representations, New Orleans, LA, May. '19 (acceptance rate: 31%)

3. Aghazadeh, A., Spring, R., LeJeune, D., Dasarathy, G., Shrivastava, A., Baraniuk, R., *Ultra Large-Scale Feature Selection using Count-Sketches*. International Conference on Machine Learning, Stockholm, Sweden, Jul. '18 (acceptance rate: 25.1%)

4. Kandaswamy, K., Dasarathy, G., Oliva, J., Schneider, J., Poczos, B., *Multi-Fidelity Bayesian Optimisation with Continuous Approximations*. International Conference on Machine Learning, Sydney, Australia, Aug. '17 (acceptance rate: 25.5%)

5. Kandaswamy, K., Dasarathy, G., Schneider, J., Poczos, B., *The Multi-Fidelity Multi-Armed Bandit*. Advances in Neural Information Processing Systems, Barcelona, Spain, Dec. '16 (acceptance rate: 22.7%)

6. Kandaswamy, K., Dasarathy, G., Oliva, J., Schneider, J., Poczos, B., *Gaussian Process Bandit Optimization with Multi-fidelity Evaluations*. Advances in Neural Information Processing Systems, Barcelona, Spain, Dec. '16 (acceptance rate: 22.7%)

7. Dasarathy, G., Singh, A., Balcan, M. F., Park, J. H., *Active Learning Algorithms for Graphical Model Selection*. International Conference on Artificial Intelligence and Statistics (AISTATS), Cadiz, Spain, May'16 (**Full Oral Presentation**, acceptance rate: 6.5%)

8. Dasarathy, G., Nowak, R., Zhu, X., *S^2: An Efficient Graph Based Active Learning Algorithm with Application to Nonparametric Classification.* Conference on Learning Theory (COLT), Paris, France, July '15 (acceptance rate: 39.7%)

9. Dasarathy, G., Nowak, R., Roch, S., *Data Requirement for Phylogenetic Inference from Multiple Loci: A New Distance Method.* IEEE/ACM Transactions on Computational Biology and Bioinformatics, Vol 12, Issue 2, April '15

10. Dasarathy, G., Shah, P., Bhaskar, B., Nowak, R., *Sketching Sparse Matrices, Covariances, and Graphs via Tensor Products.* IEEE Transactions of Information Theory, Vol 61, Issue 3, January '15

11. Eriksson, B., Dasarathy, G., Barford, P., Nowak R., *Efficient Network Tomography for Internet Topology Discovery.* IEEE/ACM Transactions on Networking, Vol 20, Issue 3, June '12

12. Eriksson, B., Dasarathy, G., Barford, P., Nowak R., *Active Clustering: Robust and Efficient Hierarchical Clustering using Adaptively Selected Similarities.* Artificial Intelligence and Statistics (AISTATS), Ft Lauderdale, FL, April '11

CONFERENCE PAPERS

1. Manickam, I., Lan, A., Dasarathy, G., Baraniuk, R., *IdeoTrace: A Framework for Ideology Tracing with a Case Study on the 2016 U.S. Presidential Election*. IEEE/ACM International Conference on Social Networks Analysis and Mining (ASONAM), Vancouver, Canada, Aug. '19 (**Full Paper**, acceptance rate: 14%)

2. Dasarathy, G., *Gaussian Graphical Model Selection from Size Constrained Measurements*. IEEE Intenrational Symposium on Information Theory (ISIT), Paris, France, Jul. '19

3. Wang, D., Lipor, J., Dasarathy, G., *Distance Penalized Active Learning via Markov Decision Processes*. IEEE Data Science Workshop, Minneapolis, MN, USA, Jun. '19

4. Dunkelberger, N., Sullivan, J., Bradley, J., Walling, N. P., Manickam, I., Dasarathy, G., Israr, A., Lau, F. W. Y., Klumb, K., Knott, B., Abnousi, F., Baraniuk, R., and O'Malley, M. K., *Conveying Language Through Haptics: A Multi-sensory Approach*. ACM International Symposium on Wearable Computers, Singapore, Oct. '18

5. Lipor, J., Dasarathy, G., *Quantile Search with Time-Varying Search Parameter*. Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, USA, Oct. '18

6. Mousavi, A., Dasarathy, G., Baraniuk, R., *DeepCodec: Adaptive Sensing and Recovery via Deep Convolutional Neural Networks.* Allerton Conference on Communication, Control, and Computing (Allerton), Monticello, IL, USA, Oct. '17

7. Dasarathy, G., Shah, P., Baraniuk, R., *Sketched Covariance Testing: A Compression-Statistics Tradeoff*. IEEE International Symposium of Information Theory (ISIT), Aachen, Germany, Jun. '17

8. Dasarathy, G., Rao, N., Baraniuk, R., *On Computational and Statistical Tradeoffs in Matrix Completion with Graph Information*. Signal Processing with Adaptive Sparse Representations (SPARS), Lisbon, Portugal, Jun. '17 (**Full Oral Presentation**, acceptance rate: 23.4%)

9. Dasarathy, G., Nowak, R., Roch, S., *New Sample Complexity Bounds for Phylogenetic Inference from Multiple Loci.* IEEE International Symposium on Information Theory (ISIT), Honolulu, HI, July '14

10. Dasarathy, G., Draper, S., *Upper and Lower Bounds on the Reliability of Content Identification.* International Zurich Seminar on Communications (S. D. Invited), Feb. '14

11. Dasarathy, G., Shah, P., Bhaskar, B., Nowak R., *Sketching Sparse Covariance Matrices and Graphs.* NIPS workshop on Randomized Methods in Machine Learning, Lake Tahoe, NV, Dec. '13

12. Dasarathy, G., Shah, P., Bhaskar, B., Nowak R., *Covariance Sketching.* 50th Annual Allerton Conference, Allerton House, Urbana-Champaign, IL (R. N. Invited), Oct. '12

13. Dasarathy, G., Draper, S., *On Reliability of Content Identification from Databases based on Noisy Queries.* IEEE International Symposium on Information Theory (ISIT), St. Petersburg, Russia, Aug. '11

14. Dasarathy, G., Draper, S., *Reliability in Noisy Search.* UCSD Workshop on Information Theory and Applications, (S. D. Invited), Feb. '11

15. Eriksson, B., Dasarathy, G., Barford, P., Nowak R., *Toward the Practical Use of Network Tomography for Internet Topology Discovery.* IEEE International Conference on Computer Communications. San Diego, CA, Mar '10

WORKSHOP ORGANIZATION

Advances In Modeling And Learning Interactions From Complex Data Dec. '17
NIPS 2017, Long Beach, CA, USA

Pulsar Workshop on Information Processing Jun. '17
SPARS 2017, Lisbon, Portugal

Selected Invited Talks and Awards

- **Invited Talk** at Computer Science, Purdue University, West Lafayette, IN Apr. '18
- **Invited Talk** at Electrical and Computer Engineering, Rice University, Houston, TX Mar. '18
- **Invited Talk** at Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada Mar. '18
- **Invited Talk** at Electrical, Computer, and Energy Engineering, Arizona State University, Tempe, AZ Mar. '18
- **Invited Talk** at Electrical and Computer Engineering, University of Illinois, Chicago, IL Mar. '18
- **Invited Talk** at Computer Science, University of California, Santa Cruz, CA Mar. '18
- **Invited Talk** at Computer Science, University of Utah, Salt Lake City, UT Mar. '18
- **Invited Talk** at Electrical Engineering and Computer Science, Pennsylvania State University, State College, PA Feb. '18
- **Invited Talk** at Electrical, Computer, and Energy Engineering, University of Colorado, Boulder, CO Feb. '18
- **Invited Talk** at Computer Science and Engineering, The Ohio State University, Columbus, OH Feb. '18
- **Invited Talk** at the Information Theory and Applications (ITA) Workshop, La Jolla, CA. Feb. '18
- **Invited Talk** at the Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA Nov. '17
- **Invited Talk** at the CSP Seminar Series, EECS, University of Michigan, Ann Arbor, MI Sep. '17
- **Invited Talk** at the Information Theory and Applications (ITA) Workshop, La Jolla, CA. Feb. '17
- **Invited Talk** at the ECE Seminar Series, Rice University, Houston, TX. May '16
- **Invited Talk** at TTI-Chicago, Chicago, IL. Apr. '16
- **NSF Travel Award** for attending SIAM Conference on Applied Algebraic Geometry, Daejon, South Korea. Aug. '15
- **Invited Talk** at the SIAM Conference on Applied Algebraic Geometry, Daejon, South Korea. Aug. '15
- **Invited Talk** at the Computer Science and Engineering Department Seminar, IIT Madras, Chennai, India. Feb. '15
- **Invited Talk** at the Electrical Engineering Department Seminar, IIT Bombay, Mumbai, India. Feb. '15
- **Invited Talk** at the Information Theory and Applications (ITA) Workshop as part of the "Graduation Day" for outstanding students and postdocs, La Jolla, CA. Feb. '15
- **Travel Award** for attending the International Symposium on Information Theory (ISIT) 2014, Honolulu, HI. Jun. '14
- **Merit Scholarship** for Best Academic Performance at VIT University, Vellore, India. Jul. '05
- **Merit Certificate** by Central Board of Secondary Education (CBSE), India being in the top 0.1% of the examinees in Physics in the All India Senior School Certificate Exam (AISSCE). Jul. '04

Teaching

Arizona State University, ECEE (Assistant Professor)

- Statistical Machine Learning: From Theory to Algorithms Spring '19
- Random Signal Analysis Fall '18

Rice University, ECE (Postdoctoral Associate)

- Advanced Digital Signal Processing: Signal Processing And Machine Learning With Graphs Fall '17

University of Wisconsin - Madison, ECE (Teaching Assistant/Grader)

- Information Theory (Instructor: Stark Draper) Spring '12
- Introduction to Signal and Information Processing (Instructor: Robert Nowak) Spring '09
- Probability and Random Processes (Instructor: James Bucklew) Spring '09
- Multiterminal Information Theory (Instructor: Vincent Tan)

Professional Activities and Service

- **Senior Program Committee Member:** AAAI Conference on Artificial Intelligence (AAAI-2018)

- **Technical Program Committee Member and Reviewer:** ACM-SIAM Symposium on Discrete Algorithms (SODA), Neural Information Processing Systems (NIPS), International Conference of Machine Learning (ICML), Symposium on the Theory of Computing (STOC), The International Conference on AI & Statistics (AISTATS), International Joint Conference on Artificial Intelligence (IJCAI) - ML Track, The AAAI Conference on Artificial Intelligence (AAAI), IEEE International Symposium on Information Theory (ISIT).

- **Journal Reviewer:** ACM Transactions on Algorithms, IEEE Transactions on Signal Processing, Signal Processing (EURASIP), Annals of Statistics, Electronic Journal of Statistics, IEEE Transactions of Information Theory, Applied and Computational Harmonic Analysis, Distributed Computing, IEEE Journal of Selected Topics in Signal Processing, PLOS ONE, IEEE Transactions of Pattern Analysis and Machine Learning.

- **Member:** CMU's BiasBusters Workshop (2015), UW Indian Graduate Student Association New Student Outreach (2010 - 2013), UW ECE Graduate Student Association (Inaugural) Board (2010).