Gauri Jagatap

gauri@iastate.edu | (515) 708-4938 | gaurijagatap.github.io

Education

Aug 2016 -*Present*	Doctor of Philosophy (PhD) in Electrical Engineering **Iowa State University** (GPA: 3.90/4)
Aug 2010 -May 2015	Bachelor of Engineering (Hons.) in Electrical and Electronics Engineering Master of Science (Hons.) in Physics **BITS Pilani University**, India (GPA: 8.69/10)

Programming Languages and Frameworks

Python, MATLAB, C, TensorFlow

Research Interests

Machine Learning, Statistical Learning, Learning Theory, Algorithms, Signal Processing, Optimization

Research

Aug 2016 -*Present*	PhD student at **Iowa State University** Advisor: Dr. Chinmay Hegde • Phase retrieval using structured sparsity: utilizing underlying structure (such as block and tree sparsities) in signal data to develop fast and sample efficient algorithms for solving absolute-valued inverse problems. Formulated and analyzed bounds on the number of sample points required for invertibility. Analyzed convergence criterion and running time of the algorithm. Applications to sub-diffractive super-resolution imaging. • Learning networks of ReLUs via alternating minimization: utilizing a novel algorithmic framework for convergence analysis of shallow ReLU based regression networks.
May 2018 -Aug 2018	Research Intern at **Mitsubishi Electric Research Laboratories (MERL)**, Cambridge, Massachusetts. Host: Dr. Petros Boufounos Multi-modal active imaging.
Jul 2015 -Jul 2016	Project Assistant at **Indian Institute of Science**, Bengaluru, India Advisor: Dr. Chandra Sekhar Seelamantula Axial super-resolution of ultrasound images using compressed sensing.
Aug 2015	Low rank and sparse decomposition of compressively sensed video via Alternating Directions Method of Multipliers (ADMM).

Journal articles

Nov 2017	**G. Jagatap** and C. Hegde, "Sample-efficient algorithms for recovering structured signals from magnitude-only measurements", *under review*, **IEEE Transactions on Information Theory**. (Paper).

Conference proceedings

Oct 2018	**G. Jagatap**, Z. Chen, C. Hegde and N. Vaswani, "Model corrected low rank ptychography", *to appear*, Proc. of IEEE International Conference on Image Processing (ICIP), 2018. (Paper).
Jun 2018	**G. Jagatap** and C. Hegde, "Towards sample-optimal methods for solving random quadratic equations with structure", *to appear*, Proc. of IEEE International Symposium on Information Theory (ISIT), 2018. (Paper).
Apr 2018	**G. Jagatap**, Z. Chen, C. Hegde and N. Vaswani, "Sub-diffraction imaging using Fourier ptychography and structured sparsity", *to appear*, Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2018 (Oral presentation). (Paper).
Apr 2018	Z. Chen, **G. Jagatap**, S. Nayer, C. Hegde and N. Vaswani, "Low rank Fourier ptychography", *to appear*, Proc. of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2018. (Paper).
Dec 2017	**G. Jagatap** and C. Hegde, "Fast, sample-efficient algorithms for structured phase retrieval", Adv. in Neural Information Processing Systems (NIPS), pp. 4922-4932, 2017. (Acceptance rate: 20.93%). (Paper).

Articles

Under review

May 2018	**G. Jagatap** and C. Hegde, "Learning ReLU Networks via Alternating Minimization", 2018. (Paper).

Workshops and Symposia

Jun 2017	**G. Jagatap** and C. Hegde, "Fast and sample-efficient algorithms for structured phase retrieval", **Midwest Machine Learning Symposium (MMLS) 2017**.
Dec 2017	**G. Jagatap** and C. Hegde, "Phase retrieval using structured sparsity: A sample efficient algorithmic framework", **Women in Machine Learning (WiML) 2017 Workshop**.

Graduate Courses

Iowa State University

Data Analytics for ECpE, Deep Machine Learning, Statistical Machine Learning, Convex Optimization, Nonlinear Programming, Detection and Estimation Theory, Theory of Probability and Statistics, Applied Linear Algebra

Graduate Course Projects

Iowa State University

May 2017	Sparse PCA using truncated and inverse power methods for topic extraction from textual database, EE 525.
May 2017	Non-negative matrix factorization using orthogonal gradient method and successive projection method for topic extraction from textual database, IE 631.
May 2018	Image in-painting for engineering datasets via deep projection models, ME 592.

Scholarships and Awards

Oct 2017	Student Travel Award for NIPS 2017
Nov 2017	WiML 2017 Travel Grant
Aug 2016 -	Research Assistant, **Iowa State University**
2011 - 15	INSPIRE Scholarship, **Department of Science and Technology, Govt. of India**

Teaching Assistantships

Spring 2018	EE 525:Data Analytics in Electrical & Computer Eng, **Iowa State University**
Spring 2014	BITS C386:Quantum Information & Computing, **BITS Pilani University**
Fall 2012	PHY F110:Physics Laboratory, **BITS Pilani University**

Reviewing

Journal articles:
IEEE Transactions on Information Theory (TIT), 2018.
IEEE Transactions on Signal Processing (TSP), 2018.
Conference articles:
International Conference on Signal Processing and Communications (SPCOM), 2018.
Women in Machine Learning (WiML) Workshop, 2017.

Professional Activities

Event coordinator, Data Science Reading Group, **Iowa State University**.

updated on July 22, 2018