Sirisha Rambhatla

PH.D. STUDENT, ELECTRICAL ENGINEERING
UNIVERSITY OF MINNESOTA –TWIN CITIES

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Interests

■ Machine learning ■ Optimization ■ Statistical Signal Processing ■ Probability and Statistics ■ Algorithms ■ Tensor Analysis ■ Natural Language Processing ■ Deep Learning ■ Topic Modeling ■ Text Mining

Experience

RESEARCH ASSISTANT, UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MN *2011-12, 2014-PRESENT*

Develop and analyze provable algorithms for statistical signal processing, optimization and machine learning tasks.

SCIENCE ADVISOR, ROBINS KAPLAN LLP, MINNEAPOLIS, MN – *2013-14*

Assist attorneys in strategizing for various technical issues involved in technology licensing and intellectual property litigation.

ENGINEERING INTERN (R&D), ATIVA MEDICAL, ST. PAUL, MN – *SUMMER 2011, 2012*

Develop signal and image processing algorithms for analysis of flow-cytometric time series data with applications to medical diagnostics.

Education

UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MN *2014–PRESENT*
PH.D. IN ELECTRICAL ENGINEERING, ***3.8***
ADVISOR: PROF. JARVIS HAUPT

UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MN *2010–2012*
MASTER OF SCIENCE IN ELECTRICAL ENGINEERING, ***3.7***

COLLEGE OF ENGINEERING ROORKEE, ROORKEE (COER), INDIA *2006-10*
BACHELOR OF TECHNOLOGY IN ELECTRONICS & TELECOMM. ENG., ***81%***

Skills

SCIENTIFIC COMPUTING/PROGRAMMING LANGUAGES
MATLAB (Expert), Python (Advanced), C (Intermediate), C++ (Intermediate)

Selected Awards & Honors

FINALIST, STUDENT BEST PAPER AWARD, ASILOMAR CONFERENCE ON SIGNAL SYSTEMS AND COMPUTING, `17.
NATIONAL SCIENCE FOUNDATION (NSF) TRAVEL AWARD, GLOBALSIP `16
E. BRUCE LEE MEMORIAL FELLOWSHIP, UNIVERSITY OF MINNESOTA `14.
PLACED THIRD IN THE UNIVERSITY, CLASS OF 2010 (COER)
AWARD FOR ACADEMIC EXCELLENCE, YEAR `07 AND `10 (COER)

Selected Research Projects

DICTIONARY-BASED GENERALIZATION OF ROBUST PCA

Analyze a demixing task via a dictionary based generalization of robust PCA. Investigate its applications in target localization for a classification task in hyper-spectral images. [1-3]

SEMI-BLIND SOURCE SEPARATION VIA SPARSE APPROXIMATION AND ONLINE DICTIONARY LEARNING

Develop an alternating minimization based algorithm for a semi-supervised learning task with applications to audio, image and vision tasks. [4]

Selected Publications

[1] **S. Rambhatla**, X. Li, and J. Haupt. A dictionary based generalization of robust PCA. In *2016 IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, pages 1315–1319, Dec 2016.

[2] **S. Rambhatla**, X. Li, and J. Haupt. Target-based hyper-spectral demixing via generalized robust PCA. In *Asilomar Conference on Signals Systems and Computers*, 2017.

[3] X. Li, J. Ren, **S. Rambhatla**, Y. Xu, and J. Haupt. Robust PCA via dictionary based outlier pursuit. In *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2018.

[4] **S. Rambhatla** and J.Haupt. "Semi-Blind Source Separation via Sparse Representations and Online Dictionary Learning". In *Proceedings of the 47th Asilomar Conference on Signals Systems and Computers, 2013.*