Sirisha Rambhatla

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

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EXPERTISE & RESEARCH 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*

Strategize 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

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

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

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

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.
SCITECHSPERIENCE FELLOW, MINNESOTA HIGH TECH ASSOCIATION `12.
PLACED THIRD IN THE UNIVERSITY, CLASS OF 2010 (COER)
AWARD FOR ACADEMIC EXCELLENCE, YEAR `07 AND `10 (COER)

Skills

PROGRAMMING LANGUAGES

■ MATLAB (Expert) ■ Python (Advanced)
■ C (Intermediate) ■ C++ (Intermediate)

Selected Research Projects

GENERALIZED ROBUST PCA

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

ONLINE DICTIONARY LEARNING AND SPARSE APPROXIMATIONS

- Develop and analyze an alternating minimization based algorithm for a semi-supervised learning task.
- Applications in audio, image and vision.

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.