

Suchismit Mahapatra

SENIOR AI SCIENTIST/ENGINEER · (MACHINE LEARNING | DEEP LEARNING)

LinkedIn, Sunnyvale, CA

716-435-8865

suchismi@buffalo.edu

https://schrilax.github.io/

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About Me

I am a Senior AI Scientist/Engineer with LinkedIn, applying different ML/DL, GNN and NLP techniques to solve related problems. I have 10+ years of research and 5 years of developer experience during which I have worked on a variety of problems.

Research Interests

My research focuses on designing and implementing novel algorithms which enable large-scale learning and includes :

- Machine/Deep Learning (ML/DL)
- Deep Graph/Geometric Learning (GNN)
- Natural Language Processing (NLP)
- Nonlinear/Distributed Optimization

Academic Background

University of Buffalo, The State University of New York

PH.D. IN COMPUTER SCIENCE

Buffalo, NY

April 2012 - June 2018

- Topic: Scalable Nonlinear Spectral Dimensionality Reduction methods for streaming data.   
- Advisors: Varun Chandola, Nils Napp & Jaroslav Zola | GPA: 4.0 out of 4.0 (Transcript)

University of Buffalo, The State University of New York

M.S. IN COMPUTER SCIENCE

Buffalo, NY

September 2010 - June 2012

- Topic: A Cold Start Recommendation System Using Item Correlation and User Similarity. 
- Advisor: Rohini Srihari | GPA: 4.0 out of 4.0 | Department rank: 1 out of 555 (Transcript)

National Institute of Technology, Rourkela

B.TECH. IN COMPUTER SCIENCE

Rourkela, India

August 2001 - May 2005

- Specialization: Discrete Mathematics and Algorithms
- Cumulative Score: 77% (First class with Honors)(Transcript) | Joint Entrance Exam Rank 22 out of 400,000

Honors

2022	Completed NLP / NLU and RL courses as part of AI certification from Stanford University.	Sunnyvale, CA
2022	Was invited to and attended the prestigious 2022 CIFAR DLRL School and OxML 2022.	Sunnyvale, CA
2021	Completed NLP certification from NVIDIA DLI and Full Stack DL certification.	Sunnyvale, CA
2021	Reviewer for ICLR (2021 - present), ACL (2021 - present) and NeurIPS (2021 - present).	Sunnyvale, CA
2020	Was invited to and attended the prestigious Theory of Reinforcement Learning program.	Berkeley, CA
2019	Reviewer for ICML (2020 - present) and EMNLP 2021.	Palo Alto, CA
2019	Was invited to and attended the prestigious Foundations of Deep Learning program.	Berkeley, CA
2017	Won a NSF Junior Researcher Award to attend CBMS Conference on Sparse Recovery.	Las Cruces, NM
2016	Became a NVIDIA GPU Educator.	Santa Clara, CA

Skills & Proficiencies

Python | PyTorch | TensorFlow | Keras | C/C++ | Apache MapReduce | Scala | CUDA | Hive

Research Experience

LinkedIn

SENIOR SCIENTIST/ENGINEER

Sunnyvale, CA

July 2021 - Present

- Firstline AI / Knowledge Graph (KG)
 - Tech Lead for Firstline AI/KG teams (10+ engineers), applying different ML/DL, GNN and NLP techniques to solve related problems.

Amobee

SCIENTIST I

Redwood City, CA

March 2020 - July 2021


- Developed a novel bidding strategy based on Win Price (WP) estimation
 - Developed and productionized a novel bidding strategy using nonlinear ML based approaches for estimating WP.
- Built a Factorization Machine (FM/FFM) based ML pipeline for usage in production
 - Led efforts to build a FM/FFM based ML pipeline using a novel sparse matrix formulation that can handle high modality features.
- Incorporating user embeddings into existing ML/DL models to improve performance
 - Trained BERT/GAN based generative models to construct user embeddings for usage by our existing models.

Criteo AI Lab

RESEARCH SCIENTIST

Palo Alto R&D Center, CA

July 2018 - December 2019


- Improve Click-through and Sales prediction
 - Enhanced existing production Click-through and Sales prediction pipeline using nonlinear ML techniques. Improved stability of our new models significantly from +50% to +5%. A/B test using new models resulted in +3-6% uplift in long-term RexT on all platforms.
- Theoretical aspects of Deep Learning (working with [Noureddine El Karoui](#))
 - Working towards understanding kernel and manifold specific aspects of theoretical deep learning.
- Resolving the posterior-collapse issue in Seq2Seq learning
 - Developed a quantization based approach towards resolving the posterior-collapse issue. 

The Research Foundation for SUNY

RESEARCH ASSISTANT

Buffalo, NY

January 2018 - May 2018

- Parallelized Hierarchical Clustering (worked with [Haimonti Dutta](#))
 - Worked towards developing a novel parallel hierarchical clustering algorithm using activation strategies.
- Kernel Manifold Learning (worked with [Varun Chandola](#))
 - Developed novel manifold Learning techniques motivated from Gaussian Processes. 

Criteo Research

RESEARCH SCIENTIST INTERN

Palo Alto R&D Center, CA

May 2017 - December 2017




- Cross-domain Query-Product (QP) modeling (worked with [Suju Rajan](#))
 - Developed a robust QP model across retailer domains via Domain Adaptation and Optimal Transport based approaches. 

The Research Foundation for SUNY

RESEARCH ASSISTANT

Buffalo, NY

January 2017 - May 2017



- Representation learning via DL/NLSDR methods (worked with [Varun Chandola](#) / [Nils Napp](#) / [Jaroslaw Zola](#))
 - Interpreting complex nonlinear processes using DL/NLSDR methods.   
- Incorporating complex constraints for sparse Logistic Regression (worked with [Varun Chandola](#))
 - Worked towards solving the sparse Logistic Regression problem with hierarchical tree-based constraints.

BD Biosciences

MACHINE LEARNING ALGORITHM DESIGN INTERN

San Jose, CA

June 2016 - August 2016



- Fast Clustering of Flow Cytometry (FC) data
 - Upscaled BD's clustering framework for high dimensional FC data upto ~16x.  

University of Buffalo, The State University of New York

RESEARCH ASSISTANT

Buffalo, NY

June 2013 - December 2015



- Nonlinear Spectral Dimensionality Reduction (worked with [Varun Chandola](#) / [Jaroslaw Zola](#) / [Nils Napp](#))
 - Developed scalable Nonlinear Spectral Dimensionality Reduction methods in a streaming setting. 
- Social Network Modeling (worked with [Varun Chandola](#))
 - Developed the xKPGM model for social network modeling. 
- Volcanic Flow Prediction (worked with [Abani Patra](#) / [Varun Chandola](#) / [Paul Bauman](#))
 - Developed a novel Gaussian Process based model for prediction of volcanic flow using GPUs.

The Research Foundation for SUNY







RESEARCH ASSISTANT

Buffalo, NY

June 2011 - August 2012

- Localization via Entropy Reduction (worked with [Robert Platt](#))
 - Developed a novel active localization technique via sequential reduction of entropy using OpenRAVE/ROS.  

Publications

1. New Methods & Metrics for LFQA tasks. **S. Mahapatra**, [V. Blagojevic](#) and [P. Bertorello](#). 2021 (Preprint available) 
2. Interpretable Graph Similarity Computation via Differentiable Optimal Alignment of Node Embeddings. [K. Doan](#), [S. Manchanda](#), **S. Mahapatra** and [C. Reddy](#). (To appear in SIGIR 2021) 
3. Discretized Bottleneck in VAE: Posterior-Collapse-Free Sequence-to-Sequence Learning. [Y. Zhao](#), [P. Yu](#), **S. Mahapatra**, [Q. Su](#) and [C. Chen](#). 2020 (Preprint available) 
4. Learning Manifolds from Non-stationary Streaming Data. **S. Mahapatra** and [V. Chandola](#). 2019 (Preprint available) 
5. S-Isomap++: Multi Manifold Learning from Streaming Data. **S. Mahapatra** and [V. Chandola](#). Proceedings of 5th IEEE International Conference on Big Data, 2017 
6. Error Metrics for Learning Reliable Manifolds from Streaming Data. **S. Mahapatra**, [F. Schoeneman](#), [V. Chandola](#), [J. Zola](#), [N. Napp](#). Proceedings of SIAM Data Mining Conference, 2017 
7. Modeling Graphs Using a Mixture of Kronecker Models. **S. Mahapatra** and [V. Chandola](#). Proceedings of the 3rd IEEE International Conference on Big Data, 2015. 