Suchismit Mahapatra

Senior AI Scientist/Engineer · (Machine Learning | Deep Learning)

LinkedIn, Sunnyvale, CA

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

Academic Background

University of Buffalo, The State University of New York — *Buffalo, NY*

Ph.D. in Computer Science — *April 2012 - June 2018*

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

University of Buffalo, The State University of New York — *Buffalo, NY*

M.S. in Computer Science — *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 — *Rourkela, India*

B.Tech. in Computer Science — *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 — *Sunnyvale, CA*

Senior Scientist/Engineer — *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 — *Redwood City, CA*

Scientist I — *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 — *Palo Alto R&D Center, CA*

Research Scientist — *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 — *Buffalo, NY*

Research Assistant — *January 2018 - May 2018*

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

Criteo Research — *Palo Alto R&D Center, CA*

Research Scientist Intern — *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 — *Buffalo, NY*

Research Assistant — *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 — *San Jose, CA*

Machine Learning Algorithm Design Intern — *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 — *Buffalo, NY*

Research Assistant — *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 — *Buffalo, NY*

Research Assistant — *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.