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	PC member 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	PC member 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*
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 AI SCIENTIST/ENGINEER   *July 2021 - Present*

- Knowledge Graph (KG)/Special Interest Group (SIG)
  - Tech Lead for KG/SIG 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 (worked 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*

- Kernel Manifold Learning (worked with Varun Chandola)
  - Developed novel manifold Learning techniques motivated from Gaussian Processes. 📄

Criteo AI Lab *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. 📄 ▶ ▶

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. 📄

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. Proceedings of the 44th International ACM SIGIR Conference on Research and Development in Information Retrieval, 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. 📄

Certifications

2022	Designing state-of-the-art Recommender Systems 📄	*Sphere*
2022	Accelerating Innovation with A/B Testing 📄	*Sphere*
2022	Natural Language Processing with Transformers 📄	*Hugging Face*
2022	Mastering Model Deployment and Inference 📄	*Sphere*
2022	Driving Business Impact with Machine Learning 📄	*Sphere*
2021	Building Transformer-Based Natural Language Processing Applications 📄	*NVIDIA DLI*