Suchismit Mahapatra

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

LinkedIn, Mountain View, CA

716-435-8865 | suchismi@buffalo.edu | https://schrilax.github.io/ | suchismit | schrilaxs | suchismit

About Me

I am a Senior AI Scientist/Engineer with LinkedIn, applying different ML/DL, NLP/LLM and GNN techniques to solve related problems. I have 11+ years of research and 8+ 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/LLM)
- Deep Graph/Geometric Learning (GNN)
- Reinforcement Learning

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

Experience

LinkedIn

Mountain View, CA

SENIOR AI SCIENTIST/ENGINEER

July 2021 - Present

- Label generation using LLMs and prompt engineering
  - Built prompt generation pipelines which can read input data and automatically create prompts to be fed to LLMs for label generation.
  - Developed a novel prompt engineering technique which can handle sequential data.
- Special Interest Group (SIG)
  - Built a novel unsupervised GNN framework which learns holistic member embeddings via incorporating edge based features in the graph convolution, which when used as seed both accelerated model training speed and improved model performance for clients.
  - Developed a novel strategy for using offline RL methods to build Task-oriented dialogue agents.
- Standardization/Oribi/Groups
  - POC for Education, Degree and Field of Study (FoS) sub-domains in the Member Standardization team.
  - Tech Lead for SIG/Oribi teams (10+ engineers), wherein work with product managers to convert business/product requirements into practical/scalable technical solutions, applying different ML/DL, GNN and NLP techniques to solve related problems.
  - Led firefighting efforts to quickly resolve P0 issues affecting 725K+ and 183K members which resulted in $5M+ revenue gain.
  - Improved average coverage of education taxonomy from 74% to 77.2%, which measures to be +5%.
  - Built relevance-based models for Groups significantly improving group post contributions (+19.23%) and consumption (+22.18%).

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.

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.

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.

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

2023	Prompt Engineering for LLMs	*Sphere*
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*