

Mitul Tiwari

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About Me

I have over 15 years of work experience in building data-driven products using AI, Machine Learning, and big data technologies. Currently I am a Director of AI and Machine Learning Engineering at ServiceNow and working on building technologies for NLP and Conversational AI.

Earlier I was the CTO and Co-founder of Passage AI, where I led Conversational AI and NLP development. Previously I was head of People You May Know and Growth Relevance at LinkedIn, where I led technical innovations in large-scale social recommender systems. Prior to that, I worked at Kosmix (now Walmart Labs) on web-scale document and query categorization, and search applications.

I earned my PhD in Computer Science from the University of Texas at Austin and my undergraduate degree from the Indian Institute of Technology, Bombay. I have also co-authored more than 20 publications in top conferences such as KDD, WWW, AAI, RecSys, VLDB, SIGIR, CIKM, and SPAA. I have also filed and granted more than 20 patents based on innovative work.

Education

PH.D. IN COMPUTER SCIENCE. UNIVERSITY OF TEXAS AT AUSTIN, 2007

M.S. IN COMPUTER SCIENCE. UNIVERSITY OF TEXAS AT AUSTIN, 2003

B.TECH. IN COMPUTER SCIENCE. INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY, 2001

Skills & Abilities

LEADERSHIP AND MANAGEMENT

- I have built, managed, and led high functional, talented, and diverse teams across multiple locations. I have been involved in strategic planning, defining multi-year roadmaps, and budget planning. I have hired, mentored both senior ICs and managers.

TECHNICAL

- Conversational AI, Natural Language Processing, Recommender Systems, Data Science, Machine Learning, Information Retrieval, Search, Social Network Analysis, Network Algorithms, Distributed Systems, Hadoop MapReduce.

THOUGHT LEADERSHIP

- I have co-authored more than twenty publications in top conferences such as KDD, WWW, AAI, RecSys, VLDB, SIGIR, CIKM, and SPAA. I have presented in more than 15 conferences to large audiences. I have also filed and granted more than 20 patents based on innovative work.

Experience

HEAD OF NATURAL LANGUAGE AI/DIRECTOR OF MACHINE LEARNING ENGINEERING | SERVICENOW | 02/2018 - PRESENT

- I lead a very talented team of applied research scientists and machine learning engineers to develop natural language processing driven production features including Conversational AI, Incident Auto Resolution, and Question-Answering for Search. We are building next generation of Natural Language Processing technologies using some of the latest Deep Learning techniques and scaling to hundreds/thousands of large enterprise customers to improve work experience of 70M+ enterprise users.

CTO AND CO-FOUNDER | PASSAGE AI | 06/2016 – 01/2018

- Built a conversational AI platform using the latest Deep Learning and Natural Language Processing technologies. Led the NLP and Deep Learning efforts at Passage.AI. Built a world-class Machine Learning and Deep Learning team. Passage.AI's natural language understanding and processing platform was used to create an intelligent conversational interface for websites or businesses. This interface could then be deployed with minimal effort on a website, mobile app, voice platforms such as Alexa or on messaging platforms such as Facebook Messenger and Slack. Passage AI got acquired by ServiceNow in February 2020.

HEAD OF PEOPLE YOU MAY KNOW AND GROWTH RELEVANCE / ENGINEERING MANAGER | LINKEDIN | 02/2011 – 09/2015

- I led a very talented bunch of data scientists and engineers for building data driven products for the growth of network (such as People You May Know), membership and relationship. I work on intersection of products, machine learning and distributed systems for big data.

LEAD MEMBER OF TECHNICAL STAFF | KOSMIX | 10/2007-01/2011

- I worked on building the next generation information retrieval platform. I work on query, tweets and document classification/categorization, text analysis, query parsing, query expansion, information extraction, and search relevance. I also work on building high performance, scalable systems for data fetching and caching.

Publications

1. Automated Utterance Generation. With Soham Parikh and Quaizar Vohra. In Proceedings of AAAI/IAAI, February 2020.
2. Dynamics of Large Multi-View Social Networks: Synergy, Cannibalization and Cross-View Interplay. With Yu Shi, Myunghwan Kim, Shaunak Chatterjee, Souvik Ghosh, Romer Rosales. In Proceedings of the 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), August 2016.
3. Influence of First Steps in a Community on Ego-Network: Growth, Diversity, and Engagement, with Atef Chaudhury and Myunghwan Kim. In Proceedings of the 25th International Conference Companion on World Wide Web (WWW), April 2016.
4. Global Diffusion via Cascading Invitations: Structure, Growth, and Homophily, with Ashton Anderson, Jure Leskovec, Jon Kleinberg, and Daniel Huttenlocker. In Proceedings of the 24th International World Wide Web Conference (WWW), May 2015.

5. The Browsemaps: Collaborative Filtering at LinkedIn, Lili Wu, Sam Shah, Sean Choi, Mitul Tiwari, Christian Posse. In Proceedings of the 6th ACM RecSys Workshop on Recommender Systems and the Social Web, October 2014.
6. Modeling Impression Discounting in Large-scale Recommender Systems , Pei Li, Laks V.S. Lakshmanan, Mitul Tiwari, Sam Shah. In Proceedings of the 20th ACM Conference on Knowledge Discovery and Data Mining (KDD), August 2014.
7. Structural Diversity in Social Recommender Systems, Xinyi Huang, Mitul Tiwari and Sam Shah. In Proceedings of the 5th ACM RecSys Workshop on Recommender Systems and the Social Web, October 2013.
8. Entity Extraction, Linking, Classification, and Tagging for Social Media: A Wikipedia-Based Approach. With Digvijay S. Lamba, Nikesh Garera, Xiaoyong Chai, Sanjib Das, Sri Subramaniam, Anand Rajaraman, Venky Harinarayan, AnHai Doan. In Proceedings of the 39th International Conference on Very Large Data Bases (VLDB), August 2013.
9. Social Media Analytics: The Kosmix Story. With Xiaoyong Chai, Omkar Deshpande, Nikesh Garera, Wang Lam, Digvijay S. Lamba, Lu Liu, Michel Tourn, Zoheb Vacheri, STS Prasad, Sri Subramaniam, Venky Harinarayan, Anand Rajaraman, Adel Ardalan, Sanjib Das, Paul Suganthan G.C., AnHai Doan. In IEEE Data Engineering Bulletin, 36 (3), 4-12.
10. Organizational Overlap on Social Networks and its Applications. With Cho-Jui Hsieh, Deepak Agarwal, Xinyi (Lisa) Huang, and Sam Shah. In Proceedings of the 22nd International World Wide Web Conference (WWW), May 2013.
11. Metaphor: a system for related search recommendations. With Azarias Reda, Yubin Park, Christian Posse, and Sam Shah. In Proceedings of the 21st International Conference on Information and Knowledge Management, October 2012.
12. Social Networking in Developing Regions. With Azarias Reda, Sam Shah, Anita Lillie, and Brian Noble. In Proceedings of the International conference on Information and Communication Technologies and Development, March 2012.
13. Online compression caching. With C. Greg Plaxton, Yu Sun, and Harrick Vin. Lecture Notes in Computer Science, 5124 Springer, 2008, ISBN 978-3-540-69900-2.
14. Online aggregation over trees. With C. Greg Plaxton, and Praveen Yalagandula. In Proceedings of the 21st IEEE International Parallel and Distributed Processing Symposium, March 2007.
15. Reconfigurable resource scheduling with variable delay bounds. With C. Greg Plaxton, Yu Sun, and Harrick Vin. In Proceedings of the 21st IEEE International Parallel and Distributed Processing Symposium, March 2007.
16. Online hierarchical cooperative caching. With Xiaozhou Li, C. Greg Plaxton, and Arun Venkataramani. Theory of Computing Systems, 39:851-874, 2006.
17. Reconfigurable resource scheduling. With C. Greg Plaxton, Yu Sun, and Harrick Vin. In Proceedings of the 18th Annual ACM Symposium on Parallelism in Algorithms and Architecture, July 2006.
18. Online hierarchical cooperative caching. With Xiaozhou Li, C. Greg Plaxton, and Arun Venkataramani. In Proceedings of the 16th Annual ACM Symposium on Parallelism in Algorithms and Architectures, June 2004.
19. Memex: A browsing assistant for collaborative archiving and mining of surf trails. With Soumen Chakrabarti, Sandeep Srivastava, and Mallela Subramanyam. In Proceedings of the 26th International Conference on Very Large Data Bases, September 2000.
20. Using Memex to archive and mine community Web browsing experience. With Soumen Chakrabarti, Sandeep Srivastava, and Mallela Subramanyam. In Proceedings of the 9th International World Wide Web Conference, May 2000.

Awards & Honors

- Forbes Technology Council, 2018-2020.
- Received Kosmonauts and Kosmix Kreed awards for innovative and teamwork towards building next generation information retrieval platform at Kosmix.
- Received MCD fellowship, University of Texas at Austin, 2001–2005.
- Placed in the top 0.05% of all examinees of IIT–JEE 1997, the Joint Entrance Examination for admission to IITs. I was ranked 49th among more than 100,000 students.

Professional Activities

- Co-chair for the 8th Workshop on Social Network Mining and Analysis (held with KDD), SNAKDD 2014.
- Program Committee member for SIGIR 2022, The Web 2022, WSDM 2022, The Web 2021, WSDM 2021, RecSys 2021, The Web 2020, WWW 2019, RecSys 2018, WWW Research Track 2018, WWW Demo Track 2018, WWW Research Track 2017, WWW Demo Track 2016, RecSys 2015, WWW Demo Track 2015, RecSys 2014, RecSys 2013, SIGIR Industrial track 2013.

Work Eligibility: US Citizen