KSHITIJ TAYAL

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PROGRAM

University of Minnesota, Minneapolis, United States — **Sep 2017 - Present**
PhD in Computer Science

- Advisor: Dr. Vipin Kumar
- Thesis funded by **Doctoral Dissertation Fellowship**

University of Hyderabad, Hyderabad, India — **July 2015**
Masters of Science in Computer Science (**Gold Medalist**)

EMPLOYMENT

Instructor for Machine Learning — **Fall 2022 - Present**
University of Minnesota, Twin Cities

Graduate Teaching Assistant — **Fall 2017 - 2021**
Introduction to Data Mining
Algorithms and Data Structures
Introduction to C/C++ Programming

Graduate Research Assistant — **Fall 2018 - Present**
University of Minnesota, Twin Cities

Applied Scientist — **Summer 2019, 2020, 2022**
Amazon, Palo Alto, California

Research Scientist — **Aug 2015 - July 2017**
Tata Innovation Labs, Hyderabad

Machine Learning Intern — **Mar 2015 - Jun 2015**
University at Buffalo, New York

HONORS & AWARDS

Best Paper Award - 2022 — Received Best paper Award at the $22nd$ SIAM International Conference on *Data Mining*. [Link]

Best Poster Award - 2017 — Received Best Poster Award at the $21st$ Annual International Conference on *Research in Computational Molecular Biology*.

Gold Medalist - 2015 — Received University Gold Medal for outstanding academic excellence during *Master of Science*.

Travel Awards NeurIPS 2020 ICML 2020, 2022 SDM 2022.

Registration Awards KDD 2020, 2021.

SELECTED PUBLICATIONS

1. **Kshitij Tayal**, Xiaowei Jia, Rahul Ghosh, Jared Willard, Jordan Read and Vipin Kumar. Invertibility aware Integration of Static and Time-series data: An application to Lake Temperature Modeling. Proceedings of the SIAM International Conference on Data Mining (SDM). 2022. [Paper]

2. Rahul Ghosh et al. **Kshitij Tayal**, Vipin Kumar. Robust Inverse Framework using Knowledge-guided Self-Supervised Learning: An application to Hydrology.. Proceedings

of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) 2022. [Paper]

3. Rahul Ghosh et al. **Kshitij Tayal**, Vipin Kumar. Meta-Transfer Learning: An application to Streamflow modelling in River-streams. Proceedings of the 22nd IEEE International Conference on Data Mining (ICDM) 2022. [Paper]

4. Xiang Li et al. **Kshitij Tayal**, Vipin Kumar. Regionalization in a global hydrologic deep learning model: from physical descriptors to random vectors. Water Resources Research (WRR) 2022. [Paper]

5. Yolanda Gil et al. **Kshitij Tayal**, Vipin Kumar. Artificial Intelligence for Modeling Complex Systems: Taming the Complexity of Expert Models to Improve Decision Making. In ACM Transactions on Interactive Intelligent Systems, 2021. [Paper]

6. **Kshitij Tayal**, Raunak Manekar, Zhong Zhuang, David Yang, Vipin Kumar, Felix Hofmann and Ju Sun. Phase Retrieval using Single-Instance Deep Generative Prior. In Optical Sensors and Sensing Congress. 2021. [Paper]

7. Raunak Manekar, **Kshitij Tayal**, Zhong Zhuang, Chieh-Hsin Lai, Vipin Kumar, and Ju Sun. Breaking Symmetries in Data-Driven Phase Retrieval. In Optical Sensors and Sensing Congress. 2021. [Paper]

8. **Kshitij Tayal**, Rahul Ghosh, and Vipin Kumar. Model-agnostic Methods for Text Classification with Inherent Noise. Proceedings of the 28th International Conference on Computational Linguistics (COLING). 2020. [Paper]

9. **Kshitij Tayal**, Nikhil Rao, Saurabh Agarwal, Xiaowei Jia, Karthik Subbian, and Vipin Kumar. Regularized Graph Convolutional Networks for Short Text Classification. In Proceedings of the 28th International Conference on Computational Linguistics (COLING). 2020. [Paper]

10. **Kshitij Tayal**, Chieh-Hsin Lai, Raunak Manekar, Zhong Zhuang, Vipin Kumar, and Ju Sun. Unlocking inverse problems using deep learning: Breaking symmetries in phase retrieval. In NeurIPS Workshop on Deep Learning and Inverse Problems. 2020. [Paper]

11. Raunak Manekar, Zhong Zhuang, **Kshitij Tayal**, Vipin Kumar, and Ju Sun. Deep Learning Initialized Phase Retrieval. In NeurIPS Workshop on Deep Learning and Inverse Problems. 2020. [Paper]

12. **Kshitij Tayal**, Chieh-Hsin Lai, Vipin Kumar, and Ju Sun. Inverse problems, Deep learning, and Symmetry Breaking. In ICML Workshop on ML Interpretability for Scientific Discovery. 2020. [Paper]

13. Raunak Manekar, **Kshitij Tayal**, Vipin Kumar, and Ju Sun. End-to-End Learning for Phase Retrieval. In ICML Workshop on ML Interpretability for Scientific Discovery. 2020. [Paper]

14. **Kshitij Tayal**, Nikhil Rao, Saurabh Agarwal, and Karthik Subbian. Short text classification using Graph Convolutional Network. In NIPS workshop on Graph Representation Learning. 2019. [Paper]

15. Daniel Garojo et al. **Kshitij Tayal**, Vipin Kumar. In Intelligent Interface for Integrating Climate, Hydrology, Agriculture, and Socioeconomic Models. In International Conference on Intelligent User Interfaces (IUI). 2019. [Paper]

16. Kavya Vaddadi, **Kshitij Tayal**, Rajgopal Srinivasan, and Naveen Sivadasan. Sequence Alignment on Directed Graphs. Journal of Computational Biology (JCB). 2019 [Paper]

	17. Neeti Pokhriyal, **Kshitij Tayal**, Ifeoma Nwogu, and Venu Govindaraju. Cognitive-Biometric Recognition From Language Usage: A Feasibility Study. IEEE Transactions on Information Forensics and Security. 2016. [Paper]
TALKS	1. Invited Talk at 6th Annual Meeting of SIAM Central States Section organized by University of Kansas on Computational Inverse Problems: Theory and Application. 2021. [Link]
	2. On paper titled Phase Retrieval using Single-Instance Deep Generative Prior, at 2021 Optical Sensors and Sensing Congress. 2021.
	3. On paper titled Model-agnostic Methods for Text Classification with Inherent Noise, at 28th International Conference on Computational Linguistics (COLING). 2020.
	4. On paper titled Regularized Graph Convolutional Networks for Short Text Classification, at 28th International Conference on Computational Linguistics (COLING). 2020.
	5. On paper titled Unlocking inverse problems using deep learning: Breaking symmetries in phase retrieval, at NeurIPS Workshop on Deep Learning and Inverse Problems. 2020.
	6. On paper titled Inverse problems, Deep learning, and Symmetry Breaking, at ICML Workshop on ML Interpretability for Scientific Discovery. 2020.
	7. On paper titled Short text classification using Graph Convolutional Network, at NIPS workshop on Graph Representation Learning. 2019.

REVIEWER (SELECTED)

Transactions on Knowledge Discovery from Data (TKDD).
ACM Knowledge Discovery and Data Mining (KDD)
IEEE International Conference On Data Mining (ICDM)
International Joint Conference on Artificial Intelligence (IJCAI)

REFERENCES

- Dr. Vipin Kumar
  Department of Computer Science, University of Minnesota
  E-mail: kumar001@umn.edu

- Dr. Ju Sun
  Department of Computer Science, University of Minnesota
  E-mail: jusun@umn.edu

- Dr. Jordan Read
  Chief of Data Science, United States Geological Survey
  E-mail: jread@usgs.gov

- Dr. Xiaowei Jia
  Department of Computer Science, University of Pittsburgh
  E-mail:xiaowei@pitt.edu

- Dr. Venu Govindaraju
  Department of Computer Science, University at Buffalo
  E-mail: venu@cubs.buffalo.edu