

Priyadarshini K

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RESEARCH INTERESTS

Multimodal learning, Natural language processing, Generative models, Knowledge graph embedding, Graph representation learning, Data-efficient machine learning - Active and transfer learning

WORK EXPERIENCE

- *Senior ML Scientist, Apple* Sep 2024 - present
- *Research Scientist II, Sony Research* Jan 2024 - Aug 2024
- *Research Scientist, Sony Research* Sept 2021 - Dec 2023
- *Project Research Engineer, IIT Bombay* Aug 2015 - Dec 2015
- *Risk Analyst, CitiCorp Service India Ltd, Pune* Jul 2013 - Oct 2014

EDUCATION

Indian Institute of Technology Bombay 2016 - 2021
Ph.D. in Electrical Engineering
Thesis: *Label-Efficient Distance Metric Learning*
Advisor: Prof. Subhasis Chaudhuri and Prof. Siddhartha Chaudhuri

Indian Institute of Technology Bombay 2011 - 2013
Masters in Electrical Engineering
Thesis: *Multimodal Rendering of 3D Objects at Different Scales*

AWARDS AND HONORS

- TCS Ph.D. Research Fellowship for 4 years (2016 - 2019)
- Qualcomm Innovation Fellowship Finalist, 2019
- Department Excellence in Teaching Assistantship (TA), 2018
- Recipient of MHRD PhD Fellowship 2016
- Recipient of MHRD Post-Graduate fellowship 2011

PUBLICATIONS

1. Uchenna Akujuobi, **Priyadarshini K**, Jihun Choi, Samy Badreddine, Kana Maruyama, Sucheendra K. Palaniappan and Tarek R. Besold. Link Prediction for Hypothesis Generation: An Active Curriculum Learning Infused Temporal Graph-Based Approach, *Artificial Intelligence Review* 2024
2. Rajeev Ranjan Dwivedi, **Priyadarshini Kumari**, Vinod K Kurmi. CosFairNet:A Parameter-Space based Approach for Bias Free Learning, *BMVC* 2024
3. Pablo Sanchez Martin, Tarek Besold, and **Priyadarshini K**. FRUNI and FTREE synthetic knowledge graphs for evaluating explainability, *NeurIPS XAIA* 2023
4. Daniel Shin, Gao Pei, **Priyadarshini K**, and Tarek Besold. Optimizing Learning Across Multimodal Transfer Features for Modeling Olfactory Perception, *Multimodal SIGKDD* 2023. The extended version is currently undergoing for the journal review process.
5. **Priyadarshini K**, Tarek Besold and Michael Spranger. Perceptual metrics for odorants: learning from non-expert similarity feedback using machine learning, *PLOS One* 2023
6. Tanoy Debnath, Samy Badreddine, **Priyadarshini K** and Michael Spranger. Comparing molecular representations, e-nose signals, and other featurization, for learning to smell aroma molecules, *PLOS One*, 2023
7. **Priyadarshini K** and Subhasis Chaudhuri. Enhancing Haptic Distinguishability of Surface Materials with Boosting Technique. *IEEE Haptics Symposium* 2022
8. **Priyadarshini K**, Siddhartha Chaudhuri, Vivek Borkar and Subhasis Chaudhuri. A unified batch selection policy for active metric learning, *ECML-PKDD* , 2021
9. **Priyadarshini K**, Ritesh Goru, Siddhartha Chaudhuri, and Subhasis Chaudhuri. Batch Decorrelation for Active Metric Learning, *IJCAI-PRICAI*, 2020.
10. **Priyadarshini K**, Siddhartha Chaudhuri, and Subhasis Chaudhuri. PerceptNet: Learning Perceptual Similarity of Haptic Textures in Presence of Unorderable Triplets. *IEEE World Haptics Conference (IEEE WHC)*, 2019.
11. **Priyadarshini K** and Subhasis Chaudhuri. Haptic Rendering of Thin, Deformable Objects with Spatially Varying Stiffness. *EuroHaptics*, 2016.
12. Praseedha K., Sreeni K., **Priyadarshini K**, Subhasis Chaudhuri. Combined Hapto-Visual and Auditory Rendering of Cultural Heritage Objects. *Asian Conference on Computer Vision (ACCV) e-Heritage Workshop*, 2014.
13. **Priyadarshini K**, Sreeni K.G. and Subhasis Chaudhuri. Scalable Rendering of Variable Density Point Cloud Data. *IEEE World Haptics Conference (IEEE WHC)*, 2013.
14. Sreeni K.G., **Priyadarshini K**, A.K. Praseedha and Subhasis Chaudhuri. Haptic Rendering of Cultural Heritage Objects at Different Scales. *EuroHaptics*, 2012.

BOOK CHAPTER

Subhasis Chaudhuri and **Priyadarshini Kumari**. Cultural Heritage Object: Bringing Them Alive Through Virtual Touch, *Digital Hampi: Preserving Indian Cultural Heritage*, Springer, 2018.

MASTERS THESIS

Multimodal Rendering of 3D Objects at Different Scales: Developed a **multimodal rendering** technique to synthesize a *hapto-visual-auditory* perceptual experience of interaction with 3D model of objects. The goal of this project was to provide access to the heritage objects to visually-impaired people.

PROFESSIONAL ACTIVITIES

- Senior program chair for WiML un-workshop @ ICML 2023
- Area chair for WiML workshop @ NeurIPS 2022
- Session chair for ECML-PKDD 2021
- Group mentor @GHC 2022
- Reviewer @ IJCAI, ECML-PKDD, Neurips, ISMAR, IEEE WHC, IEEE Haptics Symposium, Euro-Haptics

Talks

- August 2023: @ Sony Tech Talk, Virtual
 - August 2023: @ Multimodal SIGKDD 2023, Longbeach, CA
 - July 2023: @ WiML Un-workshop ICML 2023, Hawaii
 - July 2023: @ 3rd Nobel Turing Workshop, CMU Pittsburgh PA
 - May 2023: @ Sony Journal Club, Virtual
 - March 2022: @ IEEE Haptics Symposium 2022, Virtual
 - Jan 2022: @ Sony Journal Club, Virtual
 - October 2021: @ PhD defense, IIT Bombay
 - July 2021: @ Sony, Tokyo
 - September 2021: @ ECML-PKDD 2021, Virtual
 - March 2021: @ Qualcomm Innovation Fellowship, Bangalore
 - January 2021: @ IJCAI 2020, Virtual
- (older talks not listed)

TEACHING

Wavelet - Spring 2020, Computer Vision - Spring 2016, Spring 2017, Spring 2018, Statistical Signal Analysis - Fall 2019, Digital Signal Processing - Spring 2019, Signals and System - Fall 2017, Fall 2018, Communication Lab - Fall 2016