Priyesh Vijayan

Interests: Reinforcement Learning, Graph-based Representation Learning, and Large Language Models
Webpage: https://priyeshv.github.io | Gitpage: https://github.com/priyeshv
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EDUCATION

PHD IN CS, MCGILL UNIVERSITY & MILA| 2019 - PRESENT
Research Advisor: Doina Precup and Samira E Kahou

MS BY RESEARCH (THESIS) IN CSE, INDIAN INSTITUTE OF TECHNOLOGY MADRAS| 2015 - 2019
Research Advisor: Balaraman Ravindran

BE IN CSE, ANNA UNIVERSITY CHENNAI| 2009 - 2013

EXPERIENCE

ROBERT BOSCH CENTRE FOR DATA SCIENCE AND AI, DEPT. OF C.S.E, IIT MADRAS
Project Officer: Feb'19 - June'19 & Project associate: Aug'17 - Jan'19 | Supervisor: Prof. Balaraman Ravindran
Project: Network Representation Learning | An IITM-Intel Collaboration

- Built a Network Representation Learning toolkit for both attributed and non-attributed graphs.

R.I.S.E LAB, DEPT. OF C.S.E, IIT MADRAS
Project Associate: July'14 – Aug'17 | Supervisor: Balaraman Ravindran
Project: Wafer data inspection | An IITM-KLA Tencor Collaboration

- Worked on extreme multi-class class-imbalance classification problem to detect defects in semi-conductor wafers.
- Proposed multi-view semi-supervised and active learning strategies to overcome the limited labeled data setup.
- Designed CNNs based shared representation learning architectures to embed Optical and Electron-Microscope Images.

ERICSSON RESEARCH
Research Intern: June'13 – June'14 | Supervisor: Shivashankar Subramanian

- Worked on learning from heterogeneous data sources and built alarm prediction models for Telecom data.

SELECTED PUBLICATIONS

* equal contribution

ADDRESSING SPARSE-REWARDS IN RL WITH SCALABLE HIERARCHICAL NOVEL EIGEN OPTIONS
The Fortieth Annual Conference on Neural Information Processing Systems, NeurIPS'26
P Vijayan, E C Gauthier, M Reymond, S Chandar, D Precup, & I P Schwarz

REVISITING LAPLACIAN REPRESENTATIONS FOR VALUE FUNCTION APPROXIMATION IN DEEP RL
Inductive Biases in Reinforcement Learning Workshop, RLC'25
P Vijayan, P Nouri, R Rishav, S Chandar Y Chandak, M Reymond, S E Kahou, & D Precup

REVISITING LINK PREDICTION ON HETEROGENEOUS GRAPHS WITH A MULTI-VIEW PERSPECTIVE IEEE International Conference on Data Mining, ICDM'22
A Mitra, P Vijayan, R Sanam, D Goswami, S Parthasarathy & B Ravindran

BENCHMARKING AND ANALYSING UNSUPERVISED NETWORK REPRESENTATION LEARNING AND THE ILLUSION OF PROGRESS Transactions on Machine Learning Research
P Vijayan*, S Gurukar*, A Srinivasan, G Bajaj, C Cai, M Keymanesh, S Kumar, P Maneriker, A Mitra, V Patel, B Ravindran & S Parthasarathy

SCALING GRAPH PROPAGATION KERNELS FOR PREDICTIVE LEARNING
Frontiers in Big Data, section Data Mining and Management, Frontiers 2022
P Vijayan, Y Chandak, M Khapra, S Parthasarathy & B Ravindran

SEMI-SUPERVISED DEEP LEARNING FOR MULTIPLEX NETWORKS
ACM SIGKDD Conference on Knowledge Discovery and Data Mining, KDD'21
A Mitra, P Vijayan, R Sanam, D Goswami, S Parthasarathy & B Ravindran

EGO-GNNS: EXPLOITING EGO STRUCTURES IN GRAPH NEURAL NETWORKS
International Conference on Acoustics, Speech, and Signal Processing, ICASSP'21
D Sandfelder, P Vijayan and W L Hamilton

INFLUENCE MAXIMIZATION IN UNKNOWN SOCIAL NETWORKS: LEARNING POLICIES FOR EFFECTIVE GRAPH SAMPLING [Best Paper Nominee]
International Conference on Autonomous Agents and Multiagent Systems, AAMAS'20
H Kamarthi, P Vijayan, Bryan Wilder, B Ravindran & M Tambe

A UNIFIED NON-NEGATIVE MATRIX FACTORIZATION FRAMEWORK FOR SEMI-SUPERVISED LEARNING ON GRAPHS
SIAM International Conference on Data Mining, SDM'20
A Mitra, P Vijayan, S Parthasarathy & B Ravindran

UNDERSTANDING DYNAMIC SCENES USING GRAPH CONVOLUTION NETWORKS
International Conference on Intelligent Robots and Systems, IROS'20
S Mylavarapu, M Sandhu, P Vijayan, M Krishna, B Ravindran, and A Namboodiri

ON INCORPORATING STRUCTURAL INFORMATION TO IMPROVE DIALOGUE RESPONSE GENERATION NLP for Conversational AI workshop, ACL'20
N Moghe, P Vijayan, B Ravindran, and M Khapra

F-GCN: FUSION GRAPH CONVOLUTIONAL NETWORKS
Workshop on Mining and Learning with Graphs, KDD 2018
P Vijayan, Y Chandak, M Khapra, S Parthasarathy & B Ravindran

PATENTS

USER CATEGORIZATION IN COMMUNICATIONS NETWORKS | United States 20150236910
Work done during internship at Ericsson R&D | Collaborator: Shivashankar Subramanian

AWARDS AND RECOGNITION

OUTSTANDING REVIEWER: ICLR'21, NeurIPS'26
PANICKKER AWARD | 2011-2012
Best pre-final year undergraduate across all departments.

TALKS, CONFERENCES & SUMMER SCHOOLS

INVITED TALKS Transition from Machine Learning -> Deep Learning (MLDLTISP'18), S.V.C.E | 2018
3RD RBCDSAI Workshop on Recent Progress in Data Science and AI | 2018
Think like a Startup series, IITM Incubation cell | 2016

PRESENTATIONS RL Beyond Rewards Workshop, RLC'26
Representation Learning Workshop, NeurIPS'19
Eighth Statistical Relational learning Workshop, IJCAI 2018
RBC-DSAI Workshop on Recent Progress in Data Science & AI, IITM | 2017

CIFAR DL AND RL SUMMER SCHOOL, MILA | 2021
DEEP LEARNING SUMMER SCHOOL, IIIT-H | 2016
MICROSOFT SUMMER SCHOOL ON MACHINE LEARNING, IISC | 2015

TEACHING ASSISTANT

INF8953DE: Reinforcement Learning (2021)
COMP596: Network Science (2020, 2022)
COMP598: Introduction to Data Science (2020)
COMP767: Graph Representation Learning (2020)
COMP202: Foundations of Programming (2023)
ACM India Summer School on Data Science (2018)

MISC

PROGRAM COMMITTEE MEMBER: EMNLP'21, SDM'21, SDM'23, GCLR'21, NAACL-HLT'21, ADCOM'18, CoDs-COMAD'18
REVIEWER: NeurIPS'26, ICLR: 2020-2023, LoG'23, NAACL'21, ICLR'20, ACL'19, DMKD and JDSA
FIRST RUNNER UP - IBM THE GREAT MIND TECH QUIZ | 2011 | Regional
CHAIRPERSON | SVCE-ACM STUDENT CHAPTER | 2012