

Research: Reinforcement Learning and Graph-based Learning
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EDUCATION

PHD IN CS, MCGILL UNIVERSITY & MILA | 2019 - PRESENT

Research Advisor: D Precup and S 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

REINFORCEMENT LEARNING BEYOND REWARDS WORKSHOP, RLC'26 (SPOTLIGHT)

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'20

McGill School of Computer Science Ph.D. Fellowship

PANICKER 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

TEACHING ASSISTANT: INF8953DE: REINFORCEMENT LEARNING (FALL'21)
COMP596-001: NETWORK SCIENCE (FALL'20, FALL'22)
COMP598-001: INTRODUCTION TO DATA SCIENCE (FALL'20)
COMP767-001: GRAPH REPRESENTATION LEARNING (WINTER'20)
COMP202: FOUNDATIONS OF PROGRAMMING (SUMMER'23, FALL'23)
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