Avinandan Bose

2ND YEAR PHD STUDENT · CSE UW

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Education

University of Washington   *Seattle, WA, USA*
PHD, COMPUTER SCIENCE AND ENGINEERING   *Sep. 2022-Present*
- Advisors: Prof. Maryam Fazel, Prof. Lillian Ratliff

Indian Institute of Technology Kanpur (IIT K)   *Kanpur, India*
B.TECH, COMPUTER SCIENCE AND ENGINEERING   *Jul. 2018 - Dec. 2021*
- Advisors : Prof. Piyush Rai, Prof. Ketan Rajawat
- GPA : 9.2/10.0
- **Academic Excellence Award (20-19,20,21)** : Awarded to top 10 percentile students based on annual academic performance
- **CLASS OF 1990 SCHOLARSHIPS (2018)** : Awarded to top three freshmen

Research Experience

Singapore Managemnet University   *Singapore*
PROF. PRADEEP VARAKANTHAM, PROF.ARUNESH SINHA, PROF.MAI AHN TIEN   *May.2021 - Sep.2022*
- Developed techniques for global convergence in formulations with Distributional and Adversarial Robustness.
- Proposed novel Partial Policy Decentralisation techniques on Large Scale Cooperative Multi Agent RL tasks with guarantees on recovering optimal policy.
- Worked on Stackelberg Games for Network Interdiction, Resource Allocation, Adversarial Defence.
- Formulated a hierarchial system of GANs to promote few shot learning.

Indian Institue of Technology Kanpur (IIT K)   *India*
PROF.PIYUSH RAI   *Dec.2020 - Apr.2021*
- Proposed novel non-parametric generative models for images using Second Order Neural ODEs.

Indian Statistical Institute (ISI)   *India*
PROF. SOUMENDU SUNDAR MUKHERJEE   *May.2020- Nov.2020*
- Developed a framework to analyse distributional changes in Topic Proportions in Temporal Text Data.

Indian Institue of Technology Kanpur (IIT K)   *India*
PROF. KETAN RAJAWAT   *Aug.2019 - Apr.2020*
- Studied techniques of convex optimization to improve convergence rates of matrix factorization.
- Worked on Tensor Factorization for Traffic Forecasting.

Publications

Avinandan Bose, Simon S Du, Maryam Fazel "Provable Benefits of Representation Learning for Multi Task Offline RL" In Preparation for ICML 2024

Avinandan Bose, Mihaela Curmei, Daniel L Jiang, Jamie Morgenstern, Sarah Dean, Lillian J Ratliff, Maryam Fazel "Initializing Services in Interactive ML Systems for Diverse Users" Under Review AISTATS 2024

Avinandan Bose, Pradeep Varakantham "Solving Constrained Centralized MARL for Sustainable On Demand Ride Pooling" In Proceedings of 26th European Conference on Artificial Intelligence (**ECAI**) 2023

Avinandan Bose, Tracey Li, Arunesh Sinha, Mai Ahn Tien "A Fair Incentive Scheme for Community Health Worker" In Proceedings of *37th Association for Advancement in Artifical Intelligence (**AAAI**) Conference 2023*, **Oral Presentation**

Avinandan Bose, Mai Ahn Tien, Arunesh Sinha "Scalable Distributional Robustness in a Class of Non Convex Optimization with Guarantees" **NeurIPS** 2022

Chen Changyu,**Avinandan Bose**, Shih-Fen Cheng, Arunesh Sinha "Multiscale Generative Models: Improving Performance of a Generative Model Using Feedback from Other Dependent Generative Models" In Proceedings of *36th Association for Advancement in Artifical Intelligence (***AAAI***) Conference 2022*

Avinandan Bose, Aniket Das, Yatin Dandi, Piyush Rai "NeurInt : Learning to Interpolate using Neural ODEs" **Oral Spotlight** at *The Symbiosis of Deep Learning and Differential Equations (**DLDE) NeurIPS** Workshop 2021*

Mai Ahn Tien, **Avinandan Bose**, Thahn Nguyen, Arunesh Sinha "Stackelberg Network Interdiction under Boundedly Rational Adversary" Under Review at AAAI 2023

Avinandan Bose, Soumendu Sundar Mukherjee "Change Point Analysis of Topic Proportions in Temporal Text Data"

Teaching Experience

Winter 2023	**Convex Optimization and Applications**, Graduate Teaching Assistant	*UW*

Honors, Awards, & Scholarships

2018	**All India Rank 104**, Joint Entrance Examination Advanced 200,000 candidates	*India*
2018	**All India Rank 554**, Joint Entrance Examination Main 1.5 million candidates	*India*
2017	**All India Rank 68**, KVPY Scholarship Indian Institute of Science and Government of India	*India*
2018	**All India Rank 1**, West Bengal Joint Entrance Examination	*India*
2018	**Gold Medal**, Indian National Physics Olympiad (Top 35 in the nation)	*Mumbai,India*
2015	**Gold Medal**, Indian National Junior Science Olympiad (Top 35 in the nation)	*Mumbai,India*
2017	**3rd in State, National Top 1 %**, National Standard Examination in Physics	*India*
2017	**3rd in State, National Top 1 %**, National Standard Examination in Chemistry	*India*
2017	**2nd in State, National Top 1 %**, National Standard Examination in Astronomy	*India*
2016	**3rd in State, National Top 1 %**, National Standard Examination in Astronomy	*India*
2016	**State Top 1 %**, National Standard Examination in Physics	*India*
2014	**State Top 1 %**, National Standard Examination in Junior Science	*India*
2016	**Scholar**, National Talent Search Examination	*India*