Daman Arora

Indian Institute of Technology, Delhi

WORK EXPERIENCE

Research Fellow, Microsoft Research India Working on AI Alignment in the context of Retrieval Systems

EDUCATION

Indian Institute of Technology, Delhi B. Tech and M. Tech Computer Science and Engineering - 9.4

Delhi Public School, R.K. Puram Central Board of Secondary Education 95.2%

PUBLICATIONS

Evaluating and Providing a Problem Solving Benchmark for LLMs [Accepted at EMNLP 2023] Oct '23

- Generated a novel dataset for evaluating LLMs on JEE Advanced problems
- Evaluated and analysized performance of multiple open source and closed source models on this dataset
- Verifiers to Improve Planning Capabilities of LLMs [Accepted at ICML KLR workshop 2023] May '23
 - Discovered that fine-tuned language models are unable to follow pre-conditions while generating trajectores
 - Trained verifiers using random sampling to distinguish between valid and invalid actions

Exploiting Long-Range Influences for Generalized Neural Policies [Accepted at UAI 2023] Nov '22

- Devised a novel metric called Influence Distance which captures dependency length for RDDL RMDPs
- Provided a novel GNN architecture capable of discovering and exploiting long range dependencies
- Demonstrated improved explainability of the policies learnt using Imitation Learning

Generalized Neural Policies for Relational MDPs [Accepted at UAI 2022] Jan '22

- Augmented state representation for RMDPs in RDDL incorporating non-fluents to improve generalization.
- Improved performance using imitation learning(behavioral cloning) from MCTS-based planners.
- Received student scholarship from Uncertainty in Artificial Intelligence (UAI) to attend the conference

PROJECTS

Diffusion Models for Downscaling for Climate Data (Prof. Aditya Grover, UCLA) Ongoing

- Trained Stacked Diffusion Models to generate SOTA performance on downscaling for precipitation data.
- Proposed Bayesian inference from Diffusion models by marginalizing over noise variables via MC sampling.
- Proposed and implemented uncertainty bounds for diffusion models via iterative Jacobian computation.

Visual Sudoku using Graph Neural Networks (Prof. Parag Singla) May '21

- Trained a Recurrent Relational Network to solve sudoku from unlabelled images, achieving 93.4% accuracy.
- Created a dataset for LeNet using GAN trained on augmentations of grounded images to provide a warm start
- Jointly trained RRN & LeNet with contrastive loss to handle noisy labels by preventing representation collapse

chaii - Hindi and Tamil Question Answering (Prof. Mausam)

- Competed and topped among classmates on Google's chail competition as part of the course on NLP.
- Fine-tuned SOTA Multi-lingual model on data collated from multiple sources on span prediction task.
- Experimented with Ensembling and Label smoothing in order to counter class imbalance b/w Hindi & Tamil.

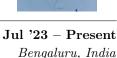
TECHNICAL SKILLS

Languages: Python, Java, C, C++ Tools: Linux, HPC, PyTorch, Tensorflow

SCHOLASTIC ACHIEVEMENTS

- * Achieved AIR 158 among 2 lakh students in JEE Advanced and AIR 118 in JEE Mains 2018 examination
- * Awarded the Merit Award for scoring in top 7 percentile, achieving 9.535 and 10 GPA in 1st & 2nd semester

* Achieved an All India Rank of 15 in the Kishore Vaigyanik Protsahan Yojana(KVPY) Examination, 2018.



Jul '18 – Jul '23 Delhi, India

Jul '16 – Jul '18 Delhi, India

Nov '21

