Ashwin Bhola

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Education

New York University   NEW YORK, NY
MS IN DATA SCIENCE | GPA: 4.0/4.0   *Expected May 2020*

- Section Leader for the undergraduate Introduction to Data Science course, Spring 2020
- Section Leader for the graduate Optimization and Computational Linear Algebra course, Fall 2019
- Coursework highlights: Natural Language Processing, Machine Learning, Big Data, Probability and Statistics

Indian Institute of Technology Delhi   DELHI, INDIA
B.TECH IN CHEMICAL ENGINEERING | GPA: 8.4/10   *May 2018*

- Coursework highlights: Design and Analysis of Algorithms, Stochastic processes, Multivariable Calculus

Experience

NYU Langone Health   NEW YORK, NY
GRADUATE STUDENT RESEARCHER | ADVISOR: DR. KRZYSZTOF GERAS   *August 2019 - Present*

- Working on detection and localization of malignant lesions in screening mammography exam images
- Remodeled Faster-RCNN with the attention mechanism and fewer proposals
- Improved the existing model's AUC from 0.91 to 0.935

IBM   NEW YORK, NY
COGNITIVE ENGINEER CONSULTANT INTERN | WATSON HEALTHCARE & LIFE SCIENCES   *June 2019 - August 2019*

- Responsible for the successful delivery of data science solutions and services in a client consulting environment
- Developed an end-to-end automated system to analyze PDF documents using a Markov chain based information extraction model
- Built in a dynamic training scheme based on learning curve analysis. Achieved F1 score of 0.52

Harvard Medical School   BOSTON, MA
RESEARCH INTERN | ADVISOR: DR. JEREMY GUNAWARDENA   *May 2017 - July 2017*

- Simulated a Markov chain to mimic a genetic network
- Used Principal Component analysis for feature engineering and logistic regression for classification

Projects

Knowledge Transfer in Reinforcement Learning |

- Analyzed RL agents in the context of generalizing prior experiences to new unseen environments
- Trained the agent using Deep-Q leaning with experience replay algorithm coupled with different transfer learning regimes
- Employed the policy learned in one environment to evaluate the difference in the agent's learning time in a second environment

DeepRecommender |

- Developed a model for the rating prediction task in recommender systems using Autoencoders
- Refined the model using dense refeeding as a data augmentation technique
- Achieved 0.925 RMSE on the holdout set of Amazon android apps ratings

Flight delays prediction |

- Developed a framework to predict flight delays based on historical delays, past weather data and US Bank holidays data
- Performed feature transformations on input and target variables to improve model performance
- Achieved 0.78 AUC on the holdout set using ensemble methods

Semantic Segmentation |

- Implemented the Unet architecture with pixel shuffle for dense prediction on Cityscapes dataset
- Devised a new training loss function to enforce background prediction for inconsistent structures
- Achieved 0.826 mean IoU on the holdout set

Publications

- Kalita P., **Bhola A.**, Goel N., Sritharan V. and Gupta S., 'Heterogeneous Endotoxin Detection Bioassay using Drug-nanoparticle Bio-conjugates: An Optimization Study', *Molecular Systems Design and Engineering*, 2 , 470-477 (**2017**)
- Goel M., **Bhola A.**, Singh A., and Gupta S., 'Tunable assembly of gold nanoparticles using a combination of electrohydrodynamic and dielectrophoretic forces' (**Submitted**)

Skills

Languages	Python (proficient), MATLAB (proficient)
Tools and Technologies	PyTorch, PySpark, scikit-learn, Hadoop, SQL, Git, LaTeX