Ashwin Bhola

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Blog | 201-680-9994

EDUCATION

NEW YORK UNIVERSITY | MS in Data Science

Expected May 2020 | New York, NY

- Coursework: Machine Learning, Probability and Statistics, Optimization and Computational Linear Algebra
- Member, The Leadership Circle, Center for Data Science

INDIAN INSTITUTE OF TECHNOLOGY DELHI | B.Tech in Chemical Engineering

May 2018 | Delhi, India | GPA: 8.4/10.0

- Top 10% in class
- Coursework highlights: Design and Analysis of Algorithms, Stochastic processes, Multivariable Calculus
- Coordinator, TRYST: Led a three tier team of 40+ ac-heads and volunteers to manage on-ground, off-ground and online publicity of 100+ events

TECHNICAL SKILLS

Languages: Python (proficient), MATLAB (proficient), Java (familiar), C/C++ (familiar)
Other tools: PyTorch, MySQL, LaTeX

ACADEMIC PROJECTS

Face detection and recognition

- Designed a eight-layered convolutional neural network for person recognition and bounding box regression
- Augmented data using techniques like horizontal flip and adding Gaussian noise
- Achieved 0.71 IoU (Intersection over Union) and 92% classification accuracy on Choke-Point dataset

Predctting Flight Delays

- Designed a model to predict flight delays for flights departing from JFK airport based on historical data of flight delays, past weather data and US Bank holidays data
- Achieved 0.78 AUC on the holdout set using ensemble methods

Recommendation system

- Implemented content-based filtering and collaborative filtering methods to generate recommendations for existing users
- Achieved RMSE value of 0.94 on the test set (MovieLens 20M dataset)

RESEARCH EXPERIENCE

HARVARD MEDICAL SCHOOL | Research Fellow

May 2017 – July 2017 | Advisor: Dr. Jeremy Gunawardena | Boston, MA

- Simulated a Markov chain using the Monte Carlo method to mimic a genetic network
- Used Principal Component analysis for feature engineering and logistic regression for classification
- Statistical analysis and analytical calculations correlated strongly with the experimental observations

IIT DELHI NANOTECHNOLOGY LAB | Research Assistant

Dec 2016 – July 2018 | Advisor: Dr. Shalini Gupta | Delhi, India

- Optimized the performance of a diagnostic device with respect to the concentration, temperature, and humidity
- Modeled the kinetics of adsorption and binding of ligands to the device
- Applied nonlinear regression analysis on experimental data sets yielding R^2 values as high as 0.98

PUBLICATIONS

- Kalita P., Bhola A., Goel N., Sritharan V. and Gupta S., 'Heterogeneous Endotoxin Detection Bioassay using Drug-nanoparticle Bioconjugates: 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)
- John W. Biddle, Ashwin Bhola, Jeremy Gunawardena, 'Interaction between steroid hormone receptors implies energy expenditure during dynamic assisted loading' (Manuscript in preparation)