Peshal Agarwal

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EDUCATION

ETH ZURICH
MS IN STATISTICS
Present | Zürich, Switzerland
GPA: 5.5*/6

IIT KANPUR
BS-MS IN MATHS & COMPUTING
MINOR IN MACHINE LEARNING
June 2018 | Kanpur, India
MS GPA: 9.62 / 10.0

COURSEWORK

GRADUATE
Reliable & Interpretable AI[a]
Probabilistic Machine Learning
Machine Learning for Healthcare
Mathematical Tools in ML
Introduction to NLP
Big Data for Engineers
Bayesian Inference
Computational Statistics
Applied Time Series
Applied Regression
Likelihood Inference
Convex Optimization
Markov Chain and Applications
Statistical Inference
Non-Linear Regression

UNDERGRADUATE
Data Structures & Algorithms
Applied Stochastic Process
Theory of Computation
Linear Algebra

SKILLS

Programming
Python • C/C++ • R
Packages/Tools
PyTorch • Scikit-learn • Numpy
SciPy • Git • LaTeX
Platforms
GNU/Linux • macOS • Windows

CERTIFICATES

Docker (Coursera)

LANGUAGES

English (Fluent)
German (A1)
Hindi (Native)

[a] In Progress

RESEARCH

ETH ZÜRICH Master Thesis | Prof. Luc Van Gool
Working on implicit modeling of data from label space for **continual learning**.

IBM RESEARCH Semester Project | Dr. Andreea Anghel
Experimented with state-of-the-art end-to-end differential ensemble architectures and, compared and contrasted them with **Gradient Boosted** Decision Trees.

IIT KANPUR Masters' Project | Prof. Debasis Kundu
Formulated suitable priors on parameters of Geometric Skew Normal distribution to perform **Bayesian analysis**, and evaluated using Kolmogorov-Smirnov test statistic.

PROJECTS

DRUG RATING Course Project | ETH Zurich
Predicted drug rating based on reviews of 280k patients and drug information. Implemented **RNN** based models for text data to understand patient sentiment.

AUTOMATED VERIFIER Course Project | ETH Zurich
Build a precise and scalable automated verifier for proving the **robustness** of fully connected and **convolutional neural networks** against adversarial attacks.

ADVERSARIAL DEFENSE Project | ETH Zurich
Regularized the curvature of the classification boundary of neural network in order to make it more robust against **black-box adversarial attacks**.

TOPIC MODELING Course Project | IIT Kanpur
Formulated updates of **Dirichlet-Multinomial** Regression model for topic modeling after implementing Stochastic Gradient Riemann Langevin Dynamics on the model.

PRICE CHANGE INDICATOR Hack4Good | ETH Zurich
Analysed data with 700 attributes of 18 key commodities across 100 districts of Syria to predict **volatility** and, trend to assess the amount of cash transfer for support.

INTERNSHIP

GOLDMAN SACHS Summer 2017 | Bangalore, India
Evaluated the total upcoming risk and Initial Margin, strategised reduction in net Initial Margin. Offered **full-time role** considering my work during the internship.

AWARDS

2018 **Silver Medal** for best Master's project in my department
2018 Academic **Excellence Award** for exemplary academic performance
2017 Master's **scholarship** by Government of India
2015 Summer Research **Fellowship** by Indian Academy of Science
2013 KVPY **Fellowship** to encourage career in basic sciences

PUBLICATION

- SnapBoost: A Heterogeneous Boosting Machine, *T. Parnell, A. Anghel, M. Lazuka, N. Ioannou, S. Kurella, P. Agarwal, N. Papandreou, and H. Pozidis*; **NeurIPS 2020**

TERM PAPERS

2018 Stochastic Optimization (Adam) Report
2018 Kruskal Count and Wild Kangaroos Report