Meenal Jhajharia

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EDUCATION

UNIVERSITY OF DELHI
Cluster Innovation Centre

BTech in IT & Math

Junior Year
GPA: 7.9 / 10.0

COURSEWORK

Statistics and Probability
Graph Theory
Linear Algebra
Design and Analysis of Algorithms
Data Structure and design
Academic writing and Communication
Economic Behaviour
Appreciating Literary Works
Complex Analysis and Algebra
Artificial Intelligence

MOOCs

Statistical Learning
Bayesian Machine Learning

RESEARCH INTERESTS

Natural language processing
Graph Theory
Bayesian Statistics
Ethics of AI
Cognitive Computing

SKILLS

PyData Stack
Probabilistic Programming
Python, R, Shell
LaTeX, C/C++, Unix
Java, MySQL, MATLAB

LINKS

Github: **mjhajharia**
LinkedIn: **meenaljhajharia**
Personal Notes: **notes.mjhajharia**

EXPERIENCE

TIME SERIES MODELING
Google Summer of Code'21 | PyMC3 - Regular contributor

Worked on extending Bayesian Time Series Models of **PyMC3** in the following ways: Implementing a new class of models - SARIMAX, Kalman filter and state space implementation. Alongside, I'm working on Pedagogical/tutorial notebooks exploring the econometric applications of these models. | **Project** |

INDIAN STATISTICAL INSTITUTE
Research Internship | Summer 2020

Worked with **Prof. Ujjwal Maulik** and **Prof. Sanghamitra Bandyopadhya** (Director, ISI Kolkata) on Non Linear Dimensionality Reduction- Algorithms based on canonical feature extraction techniques such as PCA and LDA applied through spectral graph Embedding.

PROJECTS

UNSUPERVISED KEYWORD EXTRACTION
Natural Language Processing | January - March, 2021

Developed an Unsupervised, graph-based algorithm for Keyphrase Extraction that exploits syntactic relations using dependency parsing, augmented with local text attributes. We reconstruct dependency trees in a Hyperbolic metric space to locate keywords, further ranked by statistical NLP features.**[pdf]**

REFERENCE MANAGEMENT TOOL
Semester Long Project | September - November, 2020

A Viola Dashboard with LDA based topic modeling for editing, organizing and viewing research papers. MySQL and Python backend for automatic retrieval of metadata from PDFs scraping through Google Scholar and CrossRef.

MODELING MOVEMENT OF AQUATIC ECOSYSTEMS
Mathematical Modeling - COMAP | March, 2020

Modeling the movement of Pelagic fish stocks in North Atlantic ocean for the next fifty years by analysing the rise in global and local temperatures as an effect of global warming, suggesting relocation for small fisheries accordingly. **[pdf]**

SUDOKUS AND GRAPH THEORY
Semester long project | January - February , 2020

Interpreting a Sudoku as an NP Graph coloring problem, **visualization using networkx,** and working through the Chromatic Polynomial to analyse the number of puzzles or solutions possibly generated with varying number of clues.

ACHIEVEMENTS

Received **Honorable Mention** at 2020 COMAP's Mathematical Contest in Modeling (MCM). Only team from India to get Honorable Mention.

Secured **Air 2 (top 0.01%)** in Delhi University Entrance Test 2019.