

Meenal Jhajharia

mjhajharia.com | meenal@mjhajharia.com

Interests	Algorithms, ML & Statistical Theory, Probabilistic Computation	
Education	<i>CS and Applied Math</i> <i>University of Delhi</i>	8.8/10 2019 - 2023
	<ul style="list-style-type: none">• Major Coursework: Theory of Computation, Algorithms, Knowledge Representation and Artificial Intelligence, Discrete Mathematics and Graph Theory, Linear Algebra, Ordinary Differential Equations, Partial Differential Equations, Complex Analysis and Algebra, LPP and Game Theory, Data Structures.• et cetera: Classical Mechanics, Literary Criticism, Macro and Micro Economics	
Work	<i>Research Assistant</i> Aalto University, Probabilistic ML Group, Helsinki, Finland	January 2023 - August 2023
	<ul style="list-style-type: none">• Working with Aki Vehtari and Nikolas Siccha on diagnosing Hamiltonian Monte Carlo in cases of high variation in curvature.	
	<i>Research Assistant</i> CCM, Flatiron Institute (Simons Foundation), New York, NY	June 2022 - August 2022
	<ul style="list-style-type: none">• Worked with Bob Carpenter on evaluating transforms that map a parameter (for Hamiltonian Monte Carlo Sampler) from a constrained to an unconstrained space. Repository. — Repository	
	<i>Open Source Developer</i> PyMC (Google Summer of Code), Remote	June 2021 - August 2021
	<ul style="list-style-type: none">• Worked on extending Bayesian Time Series Models of PyMC : Implementing a new class of models - SARIMAX, Kalman filter and state space implementation. Along with Pedagogical notebooks exploring the econometric applications of these models.• Currently a core contributor for the Package	
	<i>Research Intern</i> Indian Statistical Institute, Kolkata, India	June 2020 - August 2020
	<ul style="list-style-type: none">• Worked with Prof. Ujjwal Maulik and Prof. Sanghamitra Bandyopadhyaya (Director, ISI Kolkata) on Non Linear Dimensionality Reduction algorithms based on canonical feature extraction techniques and spectral graph embeddings.	
Skills	<i>Languages:</i> Python, Julia, R, MATLAB, C++, Java, SQL, TeX, Shell	
	<i>Frameworks:</i> Git, CI/CD, Tensor Libraries - TF, Jax, Torch, Theano, Probabilistic Programming Libraries - Stan, PyMC, Python ML/DL/NLP packages	

Projects

Deprecat

- Python package to add support for deprecating keyword arguments using decorators for maintenance of large open source packages, it is currently used in PyMC documentation. — [Package Docs](#) —

Unsupervised Keyword Extraction

- Developed an Unsupervised, graph-based algorithm for Keyphrase Extraction that exploits syntactic relations using dependency parsing. We reconstruct dependency trees in a Hyperbolic metric space to locate keywords, further ranked by statistical NLP features. — [Paper](#) —

Reference Management Tool

- An automated Viola(Python) Dashboard with LDA based topic modeling for organizing papers (SQL database) and auto-retrieval of metadata from PDFs scraped through GScholar.

Sudoku as a Graph k -coloring problem

- Related contribution: [tutorial notebook](#) in Networkx.

et cetera

Competitions

- *Rank 2* in Delhi University Entrance Test (Given by nearly 10k students)
- *Honorable Mention* in Consortium for Mathematics and its Applications - MCM (Only team from India to receive an Honorable Mention).

Talks

- *PyDATA* talk on Hierarchical Models with PyMC

Travel Grants

- TCS Women - Grant for FOCS 2022

Professional Service

- Reviewer - Scipy 2022
- Editor - PyOpenSci
- Organizer - PyMC-Data Umbrella Events
- Organizer - PyMCON 2023

Teaching

- Head TA for AKi Vehtari's Bayesian Data Analysis GSU course 2022
- Head TA for AKi Vehtari's Bayesian Data Analysis GSU course 2023