Rishikesh Ajay Ksheersagar

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PROFILE

- *Skills:* Natural Language Processing, LLMs, Machine Learning, Deep Learning, Statistical Analysis, Reinforcement Learning, Information
- *Languages:* Python (Pandas, Dask, NumPy, ScikitLearn, Tensorflow, PyTorch, Keras, NLTK), SQL, R, PySpark, Java, C/C++
- *Tools / Platforms:* Snowflake, Hadoop, GCP, AWS, Jenkins, Tableau, PowerBI

EDUCATION

University of Michigan - Ann Arbor   **August 2023 – April 2025**
Masters in Data Science, GPA 3.97/4.0   **Ann Arbor, MI, USA**
Subjects: CSE 595 (NLP), ECE 598 (LLMs), CSE 545 (ML), SI 650 (Information Retrieval), STATS 510 (Probability Distributions)

Savitribai Phule Pune University   **June 2015 – June 2019**
Bachelor of Engineering in Computer Engineering, GPA 3.7/4.0   **Pune, India**

PROFESSIONAL EXPERIENCE

UNIVERSITY OF MICHIGAN   **May 2024 – Present**
Research Assistant   **Ann Arbor, MI, USA**
- Exploring Fake News Detection and Perception through User Modeling with LLMs at the LIT Lab under Dr. Veronica Perez-Rosas
- Identified Causal Relationships between Climate Changes and Social Unrest by extracting text from 50k+ research papers based on Sub-Saharan Africa via POS tagging and LLMs.
- Implemented recursive search which fetches research articles, their references, and so on, till a specified depth, cleans and extracts text from the fetched PDFs, and performed Causal Analysis to identify 20k+ sentences implying direct causation.

UNIVERSITY OF MICHIGAN   **Aug 2024 – Present**
Graduate Student Instructor   **Ann Arbor, MI, USA**
- Conducting weekly lab sessions for over 30 students in the QMSS 301 course during Fall 2024 semester, topics include – Geospatial Analysis in R, Predictive Modeling and Sentiment Analysis in Python.

MU SIGMA INC.   **August 2022 – June 2023**
Data Science Manager   **Bangalore, India**
- Managed 2 teams consisting of 16 data scientists working with Fortune-100 clients in Telecom domain, spearheaded the growth and management of engagements generating $1.5M annually.
- Engineered and implemented an advanced unbalanced multi-class classifier using RxMER data, stacking XGBoost and sequential Neural Network models, resulting in 45% decrease in probable outages by precisely identifying causation of Modem Network Impairments in near real-time.
- Drove RFP connects with CXOs of 2 Fortune-100 Telecom clients for adding new engagements to Mu Sigma's portfolio successfully.

MU SIGMA INC.   **July 2019 – July 2022**
Decision Scientist   **Bangalore, India**
- Led a team of 7 data scientists in identifying key features for degraded network service for the Data Science and Data Engineering team of a Fortune-100 Telecom clientele.
- Conducted EDA on 7 datasets including Cable Modem Registration, Speed Tests, Modem Utilization, and PNM (Proactive Network Maintenance, RxMER, FEC), achieving 98.7% accuracy in detecting degraded network service events.
- Delivered a dynamic State Table for real-time monitoring of Network Outages and Downtime for ~30M cable-modems, enabling preemptive rectification of outages leading to 37% less customer complaints in comparison to the historical trends.
- Assisted the FP&A team of the world's largest home improvement retailer to plan 11 retail metrics viz. Sales, Markups, Markdowns, Inventory, among others, for upcoming fiscal halves.
- Enabled Digital Transformation by migrating a legacy Store Planning tool, reducing execution time by 60%.
- Utilized Washout 2 and 3 constraint Optimization, along with Time Series models (ARIMA) to design Financial Plans resulting in the client organization exceeding planned Gross Margin by ~2% in FY 2020-21.
- Created 7 Tableau Dashboards to provide detailed insights and flag anomalies in Financial Plans, empowering Store Managers and Region Finance Leads to meet Sales targets in 63% more instances.

BMC SOFTWARE   **August 2018 – April 2019**
Project Intern   **Pune, India**
- Worked on a PoC which involved implementation of private Blockchain with voting-based consensus mechanism by leveraging Hyperledger Composer, in addition to a traditional Structured Database, in the backend of a globally used legacy ITSM Software.

ACADEMIC PROJECTS

- **Few-Shot Preference-Based RLHF** (Jan 2024 - May 2024) - Implemented and refined few-shot preference-based reinforcement learning algorithms, including MAML, iterated MAML, and REPTILE, to optimize human feedback efficiency on Metaworld datasets. Developed a generalized reward function adaptable to new tasks with minimal human queries and ~90% reduction in training time. [GitHub]
- **Is it easy to be Multilingual** (Nov - Dec 2023) - Explored mBERT's transfer mechanics, emphasizing syntactic, morphological, and phonological similarities as key predictors. Displayed language model performance's critical role in cross-lingual transfer. Proposed a framework achieving 62.5% accuracy in selecting optimal source language for multilingual cross-transfer. [GitHub]
- **Android Malware Detection** (Jan - May 2018) - Evaluated supervised signature-based, source-code-based, and permission-based malware detection methods. Received an F-1 score of 0.93 for classification of Malware by utilizing permission flow-graphs which are generated by analyzing permissions requested by the app. [Report]

HONORS AND AWARDS

- **Mu Sigma Inc.:** Received SPOT Awards on 3 occasions (Aug 2022, Aug 2021, Oct 2020) for exceeding project goals, delivering exceptional results and designing optimal solutions.