

# Rohit Mujumdar

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San Jose, CA

## Education

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### Georgia Institute of Technology, Atlanta, GA

08/19/2019 - 05/31/2021

*Master of Science, Computer Science, Specialization - Machine Learning (GPA : 4.0/4.0)*

**Coursework:** NLP, Machine Learning, Data Science for Epidemiology, Web Search Text Mining, Graduate Algorithms

### Vishwakarma Institute of Technology, Pune, India

07/15/2013 - 05/31/2017

*Bachelor of Technology, Computer Engineering (GPA : 3.98/4.0)*

**Coursework:** Data Structures, Database Systems, Operating Systems, Distributed Computing, Business Analytics

## Technical Skills

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**Programming Languages:** Python, Java, SQL

**Libraries:** Pandas, NumPy, Scikit-learn, NLTK, HuggingFace, Prophet, NetworkX, Tweepy, SQLAlchemy, Flask, Matplotlib

**Frameworks/Tools :** PyTorch, SpringBoot, PostgreSQL, BigQuery, Google Cloud, Postman, Docker, GitHub, Protege

## Work Experience

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### Intel Corporation - *Research Engineer/Scientist* (Santa Clara, CA)

11/22/2022 - Present

- Estimating performance characteristics of extreme-scale Graph500 on shared and distributed memory environments
- Creating knowledge-bank for various graph formats, exchange protocols, conversion codes and graph storage methods
- Running graph analytics framework (GraphMat) on extreme-scale graphs (Graph500 and Protein Similarity Graphs)

### NCR Corporation - *Software Engineer I* (Atlanta, GA)

07/12/2021 - 11/18/2022

- Optimized NCR's 'Order Finder' by expediting API requests; gain of atleast 30 ms (local environment)
- Eliminated on-call incidents for orders stuck in loops by restricting number of updates to the Order
- Designed an expiration processor to purge expired orders and their versions, reducing database system redundancy
- Implemented retry functionality for GCP Pub/Sub messaging in NCR's 'Order Monitor'

### IBM Research - *Research Intern* (Almaden Research Lab, CA)

06/15/2020 - 08/14/2020

- Developed time series model to forecast resolution time of tickets; over 80% accuracy for more than 230,000 tickets
- Formulated model productionized into demand forecasting module; contributed towards savings of 30 million USD
- Collaborated with business stakeholders to refine model design, filed a *patent* with the USPTO (first-author)

### Froot Research - *Research Engineer* (Pune, India)

09/06/2018 - 05/31/2019

- Built a real-time model to cluster incident tickets and to predict trouble trends for an operations analytics dashboard
- Formulated a novel binning technique by extending the k-means clustering algorithm; delivered POC to client Atos
- Designed metrics to ascertain cluster quality and to determine membership of tickets in the clusters

### HSBC Software Development India - *Software Engineer* (Pune, India)

08/14/2017 - 08/31/2018

- Built a Java application to interface with backend mainframe systems; reduced database query operations time by 50%

## Publications

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ICDMAI'22, *Recognizing Similar Relationships Within Ontology to Fine Tune Ontology*

Sept 2022

ICWSM'22, *Overcoming Language Disparity in Online Content Classification with Multimodal Learning*

June 2022

ASONAM'21, *HawkEye: A Robust Reputation System for Community-based Misinformation Detection*

Nov 2021

INFORMS'20, *A Heuristic Approach To Compute Ticket Resolution Time (Best Poster - Honorable Mention)*

Nov 2020

## Patents

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US20220270019A1, *Ticket-Agent Matching and Agent Skillset Development*

Aug 2022

US20220164744A1, *Demand Forecasting of Service Requests Volume*

May 2022

## Graduate Research

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### Computational Data Lab for the Web and Society, Georgia Tech (*Prof. Srijan Kumar*)

Jan 2021 - June 2021

- Developed a reputation system for Community Notes (formerly Birdwatch), Twitter's feature to address misinformation
- Designed note-ranking metrics, robust against manipulation attacks; quantified user reliability in writing/rating notes
- Proposed solution more robust against manipulation; successful in influencing Birdwatch's note ranking system

## Design and Intelligence Lab, Georgia Tech (*Prof. Ashok Goel*)

*Aug 2019 - Aug 2020*

- Experimented with transformer models to improve question classification of AI Teaching Assistant *Jill Watson (JW)*
- Achieved F1-score of 0.87 with the best performing model; performed qualitative analysis of classification results
- Automated *JW*'s benchmarking pipeline; saving 4+ hours of evaluation time
- Created and annotated *JW* training questions; constructed the taxonomy and knowledge-base for *JW*

## Academic Projects

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### *Exploring Fairness in Heterogenous Graph Embeddings*

*Feb 2021 - May 2021*

- Constructed graph embeddings for MovieLens graph data using node2vec & Fairwalk; used for movie recommendation.
- Analyzed recommendation performance and fairness metrics such as statistical parity for the two algorithms

### *Do Scientific Ideas from more Prestigious Universities Spread Faster?*

*Sept 2020 - Nov 2020*

- Simulated epidemiological models on Microsoft Academic Graph to investigate the imbalance in spread of ideas
- Formulated novel measures for the subjective concepts of institutional prestige & idea quality

### *Can Machines Detect if you are a Jerk?*

*Sept 2020 - Nov 2020*

- Fine-tuned BERT to assess if we can replicate the sentiments and biases shared by Redditors on the r/AITA subreddit
- Classified reddit posts as morally ethical/unethical; achieved best accuracy of 64%

### *Conference Paper Acceptance Prediction*

*Feb 2020 - April 2020*

- Engineered novel custom features of research papers to assess factors driving their acceptability to conferences
- Implemented supervised learning models on AllenAI's PeerRead dataset; achieved best accuracy of 65%

### *Semantic Search Engine using a Dynamic Ontology*

*Jan 2016 - May 2017*

- Built an ontology-based search engine; devised algorithm to mine Entity-Relation-Entity triplets from the web
- Optimized ontology querying and storage by devising a similarity-scoring algorithm to compare similar Relations

## Leadership

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**Vice President, Public Relations, iNCRedible Toastmasters Club**, NCR Corporation

*July 2022 - March 2023*

**NCR University Recruiting Champion**, NCR Corporation

*July 2021 - July 2022*

**Head Teaching Assistant**, AI, Ethics & Society, (Prof. Ayanna Howard)

*Jan 2020 - May 2021*

**Teaching Assistant**, Knowledge-Based AI, (Prof. Ashok Goel)

*Aug 2019 - Dec 2019*