

PARITOSH KATRE

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Education

University at Buffalo

MS in Computer Science

Aug 2021 – Dec 2022

Buffalo, USA

University of Pune

Bachelor of Engineering in Computer Science

Aug 2016 – May 2020

Pune, INDIA

Experience

PayPal Inc.

Feb 2023 – Present

Machine Learning Engineer

San Jose, CA

- **Generative AI:** Building Insights Bot powered by **LangChain** and Retrieval-Augmented Generation (RAG) that uses recent Large Language Models (LLM) to extract valuable insights from internal knowledge bases conversationally. It reduces the average turnaround time by **50%** - 3 to 4 weeks instead of 6 to 8 weeks
- **Recommendation Systems:** **Reduced customer contacts** by a factor of **X** saving \$X-K annually by prototyping Process Mining, Pattern Recognition, and Process Discovery Models.
- **Validation Metrics:** Developed validation metrics around **BLUERT**, **STS**, and **ROUGE** to monitor Natural Language Generation (NLG), and Text Summarization Models.

Citispotter

June 2020 – July 2021

Machine Learning Engineer (Founding)

Cambridge, UK

- Implemented end-to-end fine-tuning of **15+** **BERT** models to build core NLP capabilities of our product. The models were deployed to perform **Emotion** Detection, **Sentiment** Analysis, **Intent** Classification, **Hate Speech**, etc.
- Designed **ML practices** for the team to use **AWS** Platform. Heavily used AWS EC2, S3 Bucket, AWS SageMaker, AWS ECR, Docker, etc.
- Built datasets (**10M+**) using **Data Augmentation** techniques on NLPAug, TextAttack, and TextAugment.
- Evaluated our black-box NLP Models using **Explainable AI** concepts like LIME, and eli5.

M&T Bank

Sept 2022 – Dec 2022

Machine Learning Engineer

Buffalo, NY

- Delivered an MVP for an AI-based Intelligent Hiring Portal and Resume Parser. It reduced the workload of the HR Team by **60%**, and optimized applicant experience by **90%**.
- Developed NLP/ML algorithms for **PDF Parsing**, Named Entity Recognition (NER), Resume to Job **Matching**, and Candidate **Ranking**.
- Award: **1st Place** // 50 Projects on Fall 2022 CSE Demo Day.

X-Lab @ University at Buffalo

Nov 2021 – Dec 2022

Research Assistant

Buffalo, NY

- Conducted novel research to develop an original impact metric for **1000s** of researchers using **Sentence Embeddings**, Knowledge Graphs, and Diversity Theory.

C-DAC, Government of India

April 2019 – May 2020

Research Intern

Pune, INDIA

- Researched how unstructured text data could be used to predict potential crime activities. The research was called *Pre-crime Tool for Event Prediction*.
- Engineered a system to build Graphs using NER, Entity Linking, and **Dependency Parsing** for **Link Prediction**.

Publications

- [SPRINGER] - *Survey and Gap Analysis on Event Prediction of English Unstructured Texts*, Springer SIST - Fourth International Conference on ICT for Intelligent Systems (ICTIS 2020)
- [IEEE] - *Text Mining and Comparative Visual Analytics on Large Collection of Speeches to Trace Socio-Political Issues*, 2019 IEEE 9th International Advance Computing Conference (IACC 2019) - **Best Paper**
- [Scopus] - *NLP based Text Analytics and Visualization of Political Speeches*, International Journal for Recent Technology and Engineering (IJRTE) - **Best Paper** at NCRAC 2019

Technical Mentorship

Kaggle, ACL Year Round Mentorship, AI4ALL

Sept 2023 - Present

Technical Mentor

Remote

- Mentoring students to build data science projects by helping them shape ideas and implementation, guidance on technical writing, and sharing past missteps.