Pritish Chakraborty

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Education

- **Indian Institute of Technology, Bombay** — Mumbai, Maharashtra
  Master of Science in Computer Science (Intelligent Systems); GPA: 8.62/10 — *July 2021 – Dec. 2023 (exp.)*
- **Manav Rachna International University** — Delhi NCR
  BTech in Computer Science and Engineering; GPA: 8.26/10 — *July 2010 – May 2014*

Research Work and Course Projects

- **Learning and Maximizing Influence in Social Networks Under Capacity Constraints**: *Advisors: Prof. Abir De, Prof. Sayan Ranu.* Developed and implemented a MC simulation based method to obtain an (approximately) optimal solution to the **top-K influence maximization problem**. Helped develop **alpha-submodular** theoretical guarantees in the process. Developed corresponding machine learning model to predict the top-K maximized influential nodes in a graph. Both simulator and ML models outperformed state-of-the-art influence maximization methods. **Paper accepted to WSDM 2023**.
- **Subset Selection in Recommendation Systems**: *Advisors: Prof. Abir De, Mr. Anil Yelundur (Amazon).* Explored a **curriculum learning** method to choose subsets of examples at train time, such that a minimal loss in test accuracy is suffered. The idea is to focus on the harder training examples for more robust learning.
- **Graph Energy-Based Models for Molecular Generation**: *Instructor: Prof. Sunita Sarawagi, Course: Advanced Machine Learning.* Explored a workshop paper on molecular generation using graph energy-based models. Modified the original implementation to learn a function in the **goal-based generation** regime, using an **interpretable neural network**. Performed a hyperparameter grid search over the regularization parameter to deal with an inconsistency in the reported accuracy of the generated molecules.
- **Submodular Functions for Document Summarization**: *Instructor: Prof. Ganesh Ramakrishnan, Course: Optimization in Machine Learning.* Explored a paper on document summarization using submodular functions. Attempted to solve the summarization tasks using deep submodular functions. Implemented a hyperparameter-based performance review for the original submodular functions.

Past Work Experience

- **Arc.Dev** — Remote
  Freelance Software Engineer — *March 2020 - January 2021*
  - **Responsibilities**: Engaged in paid mentorship for multiple students on topics such as Python backend development, Django webapp development, and the relevant basics of CS.
  - **Projects**: Worked on projects such as a medical telehealth platform service similar to Plushcare and Teladoc which aims to tap into the secondary healthcare staff market.
- **Instahyre** — New Delhi, India
  Software Engineering/Head of Engineering — *July 2015 - May 2019*
  - **Responsibilities**: Handled the complete tech stack and deployment pipeline for multiple feature release cycles. Mentored and brought junior engineers upto speed.
  - **Projects**: Worked on several important features - the matching engine, the Elasticsearch-powered search platform, internal tools such as a rotating-proxy scraper and a depth-first information extractor, etc. - end to end. Dealt with last-mile performance issues for a streamlined user experience. Took responsibility for production management.
  - **Growth**: Played an active part in taking this early stage startup from break-even to profitability over the course of four years.

Technical Skills

- **Languages**: Python, Javascript, C/C++, SQL, other languages such as C# and Java
- **Technologies**: Pytorch, Pytorch Geometric, Django, Angular.js, React, REST, other web technologies

Courses Taken

Foundations of Machine Learning, Algorithms and Complexity, Web Search and Mining, Advanced Machine Learning, Optimization in Machine Learning, Combinatorics