Pritish Chakraborty
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Education

- **Indian Institute of Technology, Bombay** — Mumbai, Maharashtra
  Master of Science in Computer Science (Intelligent Systems); GPA: 9.14/10 — *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**.
- **Learning Resource-Efficient Mixture Models via Subset Selection**: *Advisors: Prof. Abir De, Prof. Rishabh Iyer, Prof. Ganesh Ramakrishnan.* Was responsible for the entire experiment pipeline where we had to run a thorough evaluation of the proposed mixture models framework. Reported results on comparison of various partitioning baselines against our proposed method, as well as the training vs inference time GPU memory consumption of our method against certain knowledge-distillation baselines. **Paper accepted to ICML 2023**.
- **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.

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, Organization of Web Information (NLP+IR)