SOURAV CHAKRABORTY (website) email: sourav.chakraborty@colorado.edu

Education

Master of Science, University of Colorado Boulder, *USA*. **2019–Now**
- Department of Computer Science, GPA: 3.96/4.00
- *Coursework: Deep Learning, Convex Optimization, Algorithmic Game Theory, Algorithms, Natural Language Processing, Theory of Machine Learning, Learning and Sequential Decision Making, Probabilistic Models etc.*

Bachelor of Engineering, Birla Institute of Technology, Mesra, *Ranchi, India*. **2012–2016**
- Department of Computer Science, First Class with Distinction

Research

Graduate Researcher, *Chen Research Group*, University of Colorado Boulder. **2020-Now**
- I work with Prof Lijun Chen on developing algorithms and performing theoretical analysis on the themes of making decisions under uncertainty and sequential decision making, currently focusing on reinforcement learning.
- Contributed as a first author on a project where we studied the a variant of incentivized exploration in a couple of non-stationary stochastic multi-armed bandit environments.

Industry

Software Engineer, *Flipkart*, Bangalore, India. **2016–2019**
- Related Searches and Shopping Ideas - The main purpose of this product is to recommend users to different search queries, in accordance with the typed query. Designed and implemented the entire pipeline in Java Cascading framework. This helped in boosting the query coverage by 3x.
- Predicted Search Ranking Signals - Contributed to the implementation of a machine learnt model to predict the signals which would increase the coverage of the entire query space. This overall increased 4% of sales.
- Pluggable DataStore Backup Service - Created an interface for the backup service where various datastores can plug there implementations of drivers for backing them up in Flipkart Cloud. Also, implemented the corresponding drivers for MySQL datastore
- Backup Recovery as a Service (BRaaS) - Contributed to the *new service* written for the backup of various forms of data into the in-house Flipkart Cloud. All services/apps were shifted to this service for backup.

Selected Relevant Projects

Contextual vectorized representation of words, *NLP*, report, code. **Summer 2020**
- A word embedding model implementation based on the popular skipgram architecture. It involves alterations of the scoring algorithm to give more weightage to the context words that are closer to the target word in a skipgram sliding window.

Solving Games using Q-learning and Regret Matching Methods, *Reinforcement Learning*, report, code. **Spring 2020**
- This project aims to relax those constraints and use a local no-regret algorithm (LONR) by Kash et al, which internally uses a Q-learning like update rule to games which do not have terminal states or perfect recall.

Incentivized Exploration for Multi-Armed Bandits under Reward Drift., *Reinforcement Learning*, code. **Fall 2020**
- Based on the paper by Liu et al 2020. Incentivized Exploration for Multi-Armed Bandits under Reward Drift where the players receive compensation for exploring arms other than the greedy choice and may provide biased feedback on reward drift.

Teaching

Instructor, University of Colorado. **Boulder, CO**
- FALL 2021: CSCI 1200 - Introduction to Computing with Python
- SUMMER 2020: CSCI 3022 - Introduction to Data Science with Probability and Statistics.
- *Responsibilities*: Taking lectures, developing homework assignments, projects and content materials along with conducting weekly office hours and managing a team of instructional staff of size 10, including TAs, Lecture Assistants and graders.

Graduate Teaching Assistant, University of Colorado. **Boulder, CO**
- FALL 2020, SPRING 2021, SUMMER 2021: CSCI 1300 - Starting Computing
- *Responsibilities*: Taking lectures, developing homework assignments, projects and content materials. Doing interview grading along with conducting weekly office hours.

Skills

Languages: C, C++, Java, Python

Frameworks: Django, Flask, Cascading(Java), PySpark