

# Paramita Koley

*Residence/domicile:* Cnerg-205, CSE, IIT Kharagpur, 721302

*E-mail:* paramita2000@gmail.com \* *Telephone number:* +91-9167202615

*Place of birth:* Kolkata, India \* *Date of birth:* 16-06-1988

[Web-page](#) [Google Scholar](#) [DBLP profile](#)

## Education

---

### Doctor of Philosophy

Computer Science

Indian Institute of Technology, Kharagpur

July 2018 - current

**Supervisor:** Prof. Niloy Ganguly and Prof. Sourangshu Bhattacharya.

**Thesis title:** Robust learning in asynchronous event data and multi-agent team competition [Thesis submitted].

### Master of Engineering

Computer Science

Indian Institute of Science, Bangalore

2011 - 2013

Grade: 6.4/8

### Bachelor of Engineering

Information Technology

IEST, Shibpur

2006 - 2010

Percentage: 76.6%

### Higher Secondary

WBBHSE

Tarakeswar Mahavidyalaya

2004 - 2006

Percentage: 95.1%

## Research interests

---

My current research involves solving various challenges in **modeling asynchronous temporal sequences** via the framework of **marked temporal point processes**. Besides, I also explore various learning challenges in **multi-agent team competitions**, for which I employ various tools from the **reinforcement learning** framework.

## Peer Reviewed Conference/Journal Publications

---

- **Differentiable Change-point detection in temporal point process.** Paramita Koley, Harshavardhan Alimi, Shrey Singla, Sourangshu Bhattacharya, Niloy Ganguly, Abir De. AISTATS 2023.
- **Offsetting Unequal Competition Through RL-Assisted Incentive Schemes.** Paramita Koley, Aurghya Maiti, Sourangshu Bhattacharya, and Niloy Ganguly. IEEE Transactions on Computational Social Systems (2022).
- **Demarcating Endogenous and Exogenous Opinion Dynamics: An Experimental Design Approach.** Paramita Koley, Avirup Saha, Sourangshu Bhattacharya, Niloy Ganguly, Abir De. ACM Trans. Knowl. Discov. Data 15(6): 99:1-99:25 (2021)
- **Regression under Human Assistance.** Abir De, Paramita Koley, Niloy Ganguly, Manuel Gomez-Rodriguez. AAAI 2020.
- **Generative Maximum Entropy Learning for Multiclass Classification.** Ambedkar Dukkipati, Gaurav Pandey, Debarghya Ghoshdastidar, Paramita Koley, D. M. V. Satya Sriram. ICDM 2013.

## Research experience

---

### MPI-SWS

Internship under Prof. Manuel Gomez Rodriguez

Kaiserslautern, Germany

May - July 2019

- Worked on designing algorithms for human-assisted machine learning in linear regression.

### IIT Bombay

Research Assistant in Machine Learning

Bombay, India

July 2013 - Feb 2018

- Worked on various challenges of kernel-based methods and multi-task active learning techniques.

## Projects

---

### Demarcating exogenous events from networked event dynamics

*During PhD*

Addressed the problem of demarcating externally stimulated events from networked event dynamics, where events are modeled via temporal point process framework and demarcation is performed via subset selection of submodular functions.

### Change-point detection in temporal event data

*During PhD*

Addressed change-point detection problem for continuous-time event data in temporal point process framework by solving a log-likelihood ratio-based differentiable bi-level optimization problem.

### Offsetting bias in unequal competition via incentives

*During PhD*

Addressed the problem of offsetting bias in unequal competition, where inequality stems from agents with different skill levels. In particular, we analyze a bunch of incentive schemes for this purpose using a multi-agent reinforcement learning framework.

### Opponent-aware role-oriented learning in team competition

*During PhD*

Addressed the problem of learning diverse, opponent-aware, role-oriented policies in multi-agent team competition using multi-agent reinforcement learning framework.

### Generative Maximum Entropy Learning for Multiclass Classification

*ME Thesis at IISc*

*July 2012 - April 2013*

Addressed the feature selection problem in the multiclass problem with many features like text classification with a huge vocabulary.

### Differentiation-based Active Multi-task Learning

*Research assistant, IIT Bombay*

*2018*

Addressed the problem of active sample selection in a multitask learning problem. Proposed a general approach for active selection that can be applied to various multitask learning frameworks, i.e., multitask learning via sharing task relationship matrix or learning shared feature representation.

## Academic achievements

---

- Secured rank 8 in GATE (CS) 2011.
- Secured rank 17 in West Bengal Higher Secondary examination by securing 95% marks.

## *Technical abilities*

---

<b>Course TA</b>	Machine Learning, Programming and data structure, Information Retrieval, Linear Optimization, Convex Optimization
<b>Relevant courses</b>	Machine Learning, Graphical Models, Information Retrieval, Scalable Data Mining, Optimization, Algorithms and Data Structures
<b>Programming Languages/Tools Toolboxes/Frameworks</b>	Python, C, MATLAB. Pytorch, Scikit-learn, Pandas, numpy, nltk, tick.

## *Language proficiencies*

---

- English, Bengali, Hindi