

Paramita Koley

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

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

Education

Post Doctorate Fellow

Mentor: Prof. Malay Bhattacharya
SERB National Post-Doctorate Fellow

ISI Kolkata
March 2024 - Present

Post Doctorate Fellow

Advisor: Prof. Niloy Ganguly.
Chanakya Post-Doctorate Fellow

AI4ICPS Hub Foundation (IIT Kharagpur)
January 2024 - March 2024

Doctor of Philosophy

Computer Science

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

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

Indian Institute of Technology, Kharagpur
July 2018 - February 2024

Master of Engineering

Computer Science

Grade: 6.4/8

Indian Institute of Science, Bangalore
2011 - 2013

Bachelor of Engineering

Information Technology

Percentage: 76.6%

IIST, Shibpur
2006 - 2010

Higher Secondary

WBBHSE

Percentage: 95.1%

Tarakeswar Mahavidyalaya
2004 - 2006

Research interests

My primary area of research revolves around addressing diverse challenges related to **temporal sequence modeling** in various configurations. In graduation, I concentrated on **robust learning of temporal sequence** against different data artifacts using temporal point process framework. Currently, my research delves into a broader spectrum of issues within temporal sequence modeling.

Specifically, I am working on the **integration of temporal point process-based models with dynamic graph algorithms** for various real-world networks. In this line, my projects involve temporal knowledge graph completion problems and delay prediction in the railway network. My other works involve modeling the impact of **external stimuli on human behavior** using temporal event data and **temporal sequence generation with diffusion models**.

My another research interest involves designing **energy-efficient large language model inference**. Furthermore, during my graduation, I investigated various learning challenges in **multi-agent team competitions**, utilizing tools from the reinforcement learning framework.

Peer Reviewed Conference/Journal Publications

- **Towards Sustainable NLP: Insights from Benchmarking Inference Energy in Large Language Models.** Soham Poddar, Paramita Koley, Janardan Misra, Niloy Ganguly, Saptarshi Ghosh. NAACL 2025.

- **ExPERT: Modeling Human Behavior under External Stimuli Aware Personalized MTPP.** Subhendu Khatuya, Ritwik Vij, Paramita Koley, Samik Dutta, and Niloy Ganguly. AAAI 2025.
- **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, Aurchya 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

SRIC, IIT Kharagpur

Project Scientist under Prof. Pawan Goyal

Kharagpur

August - Dec 2023

- Worked on designing algorithms for modeling temporal point process.

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.

Teaching experience

Introduction to computing

Fall 2024-2025

MIU, ISI Kolkata

- This is an undergraduate course for 1st year BSDS students.

Ongoing Sponsored Projects

Temporal Modeling for Continuous Time Dynamic Graphs

Sponsored by SERB

MIU, ISI Kolkata

Budget 30 Lakh

Addresses the problem of integration of temporal point process-based models with dynamic graph algorithms for various real-world networks. Specifically, I am working on temporal knowledge graph completion problems and delay prediction in the railway network.

Projects

Modeling human-behavior under external stimuli

During PostDoc

Addressed the problem of modeling human behavior under various external stimuli by modifying the attention mechanism in the attention-based neural temporal point process (TPP) framework. Real-life examples include customer behavior under coupons, student behavior before the deadline, etc.

Demarcating exogenous events from networked event dynamics

During PhD

Addressed the problem of demarcating externally stimulated events from event stream generated in a network 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, where the model parameters are selected by solving a bi-level optimization framework.

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.

Academic achievements

- Recipient of SERB National Post Doctoral Fellowship at Machine Intelligence Unit, ISI Kolkata.
- Recipient of Chanakya Post Doctoral Fellowship
- Served as program committee member of the following conferences: WSDM 2025, CODS-COMAD 2024, WSDM 2024, AISTATS 2023, AAAI 2022
- Secured rank 8 in GATE (CS) 2011.
- Secured rank 17 in West Bengal Higher Secondary examination by securing 95% marks.

Technical abilities

Course TA

Machine Learning, Programming and Data Structure, Information Retrieval

Relevant courses

Machine Learning, Graphical Models, Information Retrieval, Scalable Data Mining, Optimization, Algorithms and Data Structures

**Programming Languages/Tools
Toolboxes/Frameworks**

Python, C, MATLAB.
Pytorch, Scikit-learn, Pandas, numpy, nltk, tick.

Language proficiencies

- English, Bengali