

# Paramita Koley

## Present Address

Cnerg, CSE Department  
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## Research Interests

My broad area of research interest is machine learning. My current research involves solving various challenges in modeling discrete event sequences, particularly using various neural Temporal point process models. Some examples of the current problems I am working on are:

- ▷ Robust temporal data modeling through subset selection
- ▷ Change-point detection in temporal data
- ▷ Human-assisted linear regression
- ▷ Multi-agent reinforcement learning using the actor-critic framework in various competitive team-games

## Education

### Doctor of Philosophy

CSE, IIT Kharagpur, India  
2018-Present

### Master of Engineering

CSA, IISc Bangalore, India  
2011-2013  
CGPA : 6.4/8.0

### Bachelor of Engineering

Information Technology, IEST Shibpur, India  
2006-2010  
Percentage : 76.6%

## 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.

## Projects

1. **Generative Maximum Entropy Learning for Multiclass Classification (ME Thesis at IISc)**  
Here, we address the feature selection problem in the multiclass problem with many features like text classification with a huge vocabulary.
2. **Differentiation-based Active Multi-task Learning (during research assistantship at IIT Bombay)**  
Here, we address the problem of active sample selection in a multitask learning problem. We propose 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.

## Internships

- ▷ Internship at MPI-SWS, Kaiserslautern under Prof. Manuel Gomez Rodriguez during May-July 2019.

## Academic Achievements

- ▷ Secured rank 8 in GATE (Graduate Aptitude Test in Engineering) 2011.
- ▷ Secured rank 17 in West Bengal Higher Secondary examination by securing 95% marks .

## Relevant courses

- ▷ Linear Algebra, Graph Theory, Probability and Random Process, Convex and Combinatorial Optimization, Foundation and Advance Topics in Machine Learning, Pattern Recognition and Neural Networks, Graphical Models, Information Retrieval, Scalable Data Mining.

## Technical Skills

- ▷ Languages: Python, C, MATLAB.
- ▷ Toolboxes/Frameworks: Pytorch, Scikit-learn, Pandas, numpy, nltk, tick

## Languages

- ▷ English, Bengali, Hindi

## References

- ▷ Prof. Niloy Ganguly, Department of CSE, IIT Kharagpur. **PhD supervisor**
  - Email : niloy@cse.iitkgp.ac.in
  - Address : Dept. of Computer Science and Engg., IIT Kharagpur, Kharagpur , West Bengal - 721302
- ▷ Prof. Sourangshu Bhattacharya, Department of CSE, IIT Kharagpur. **Joint PhD supervisor**
  - Email : sourangshu@cse.iitkgp.ernet.in
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