Paramita Koley

Present Address
205, CSE Department
IIT Kharagpur
Kharagpur , West Bengal - 721302

Contacts
Email : paramita2000@gmail.com
Mobile : (+91) 9167202615

Research Interests

Machine Learning, Artificial Intelligence, Network Science

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, BESU, India
2006-2010
Percentage : 76.6%

Projects

1. **Generative Maximum Entropy Learning for Multiclass Classification(ME Thesis at IISc)** Here we address the feature selection problem in Multiclass problem with large number of features like text classification with extremely large vocabulary. We consider the generative setting of multiclass learning and feature with higher entropy is given higher priority in selection. We compare our approach on benchmark datasets with multiple state-of-the-art techniques and it always either outperform or produces comparable results.

2. **Diverse Multiple Kernel Learning via Submodular Optimization(at IIT Bombay)** Here we address the problem of choosing appropriate linear, sparse and diverse combination of base kernels for a given learning problem. The diversity of kernels is captured by various submodular functions defined over eigenvalues of joint gram matrix and thereby the submodular optimization framework is exploited for our purpose. We compare our approach with state of the art techniques.

3. **Differentiation based Active Multi-task Learning(at IIT Bombay)** Here we address the problem of active sample selection in multi-task learning problem which is a practical problem where unlabeled samples are huge over web, but obtaining labeled sample is costly. For active selection we propose a general approach that can be applied to various multi-task learning frameworks i.e. multitask learning via sharing task relationship matrix or learning shared feature representation. We consider the setting of margin based active selection. Along with margin information, in the score function each task is weighted according to the proportion it influences the shared representation.

Peer Reviewed Conference Publications

1. Dukkipati, Ambedkar and Pandey, Gaurav and Ghoshdastidar, Debarghya and Koley, Paramita and Sriram, DMV Satya. "*Generative Maximum Entropy Learning for Multiclass Classification*". To appear in Proceedings of the 13^{th} *Data Mining (ICDM), 2013 IEEE 13th International Conference of Data Mining*.

Experience

1. Research Scholar at Indian Institute of Technology Bombay.

Relevant courses

- ▷ Linear Algebra, Graph theory, Probability and Random Process, Convex Optimization, Combinatorial Optimization, Foundation and Advance Topics in Machine Learning, Pattern Recognition and Neural Networks,, Graphical Models.

Teaching Assistantship

- ▷ Convex Optimization by Prof. Ganesh Ramakrishnan : January - April 2015.
- ▷ Computer Programming(Undergraduate) by Prof Deepak B. Phatak and Supratik Chakraborty : July-December 2014.
- ▷ Machine Learning by Prof. Saketha Nath J. : January - April 2014.
- ▷ Linear Optimization by Prof. Sundar Viswanathan : August - December 2013.

Technical Skills

- ▷ Languages: Python, Java, C, MATLAB.

Academic Achievements

- ▷ GATE(Graduate Aptitude Test in Engineering) rank 8 among more than 1,00,000 students in 2011.
- ▷ Got 17th in West Bengal Higher Secondary examination by securing 95% marks .

References

- ▷ Prof. Niloy Ganguly, Department of CSE, IIT Kharagpur.
  - 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.
  - Email : sourangshu@cse.iitkgp.ernet.in
  - Address : Dept. of Computer Science and Engg., IIT Kharagpur, Kharagpur , West Bengal - 721302
- ▷ Prof. Saketha Nath J, Department of CSE, IIT Hyderabad.
  - Email : saketha@iith.ac.in
  - Mail : Dept. of Computer Science and Engg., Room No. 104, E block, IIT Hyderabad, Kandi, Sangareddy. 502285.

Last modified : January 9, 2019