

## Research Interests:

Data Mining, Machine Learning, Information Retrieval and Natural Language Processing

## Education:

<b>Master of Science, Computer Science and Engineering</b> ( <i>2013-Present</i> ) International Institute of Information Technology, Hyderabad Advisors: Dr. Manish Gupta, Senior Applied Researcher, Microsoft Bing, Hyderabad Dr. Vasudeva Varma, Professor and Dean Research, IIIT, Hyderabad	<b>9/10</b>
<b>B.Tech in Computer Science and Engineering</b> ( <i>2009-2013</i> ) Heritage Institute of Technology, West Bengal University of Technology, Kolkata	<b>8.98/10</b>
<b>Higher Secondary Examination</b> ( <i>2007-2009</i> ) St. John's Diocesan Girls School, West Bengal Council of Higher Secondary Education, Kolkata	<b>82 %</b>
<b>Secondary Examination</b> ( <i>2007</i> ) St. John's Diocesan Girls School, West Bengal Board of Secondary Education, Kolkata	<b>81 %</b>

## Publications:

- **Query-based Graph Cuboid Outlier Detection**  
International Conference on Advances in Social Network Analysis and Mining (ASONAM), France, 2015  
[Ayushi Dalmia](#), Manish Gupta, Vasudeva Varma
- **Twitter Sentiment Analysis: The good, the bad and the neutral!**  
International Workshop on Semantic Evaluation (SemEval), Denver, Colorado, 2015  
[Ayushi Dalmia](#), Manish Gupta, Vasudeva Varma
- **Scalable Hierarchical Recommendations using Spatial Autocorrelation**  
International Conference on Big Data Science and Computing (BigData), Beijing, China, 2014  
[Ayushi Dalmia](#), Joydeep Das, Prosenjit Gupta, Subhashis Majumder, and Debarshi Dutta

## Awards and Achievements:

- **Best Poster Award** at BigData 2014.
- Secured **AIR 553** in the paper Computer Science and Information Technology in GATE 2013.(top 0.25 %)
- **Founding chair** and member of ACM Student Chapter, Heritage Institute of Technology, Kolkata (*December, 2011-May, 2013*), awarded the Certificate of Service by ACM for the same.
- Secured departmental rank **4th out of 120** at Heritage Institute of Technology, Kolkata
- Received scholarship from Government of India, Ministry of Human Resource Development, Department of Higher Education under the Central Sector Scheme of Scholarships for College and University Students. (*2009*)

## Experience:

Jan'14 - Present	Research Assistant at Search and Information Extraction Lab (SIEL), LTRC, IIIT Hyderabad.
Aug'15 - Dec'15	Teaching Assistant for Machine Learning assisting Prof. C.V. Jawahar.
Jan'15 - May'15	Project Mentor for Information Retrieval assisting Prof. Vasudeva Varma.
Aug'14 - Dec'14	Teaching Assistant for Web Mining assisting Prof. Manish Gupta.
May'12 - July'12	Summer Research Intern at Department of CSE, IIT, Kharagpur. Advisors: Prof. Niloy Ganguly and Dr. Tanmoy Chakraborty, IIT Kharagpur.

## Technical Skills:

<b>Programming and Scripting Languages</b>	Python, Java
<b>Database</b>	MySQL, MongoDB
<b>Softwares</b>	LaTeX, Git
<b>Libraries and Tools</b>	Scikit-learn, NetworkX, iGraph, SNAP

## Select Projects:

### **Evolutionary Graph Cuboid Outlier Detection using Subspace Ensemble Learning** (*Sep 2015 - Present*)

Working with Dr. Manish Gupta and Dr. Vasudeva Varma to extend the paper “Query-based Graph Cuboid Outlier Detection” from *static graphs* to *temporal graphs*. Given a subgraph query, the goal is to find interesting regions of the graph (graph cuboids) for evolving graphs. Formulated an outlier score matrix from the evolutionary graph snapshots and applied subspace ensemble learning to obtain interesting graph cuboids.

### **Permanence for Local Community Detection** (*Dec 2015- Present*)

Working with Dr. David Gleich and Dr. Tanmoy Chakraborty to formulate a metric for local community detection using the principle of permanence, an established metric for non-overlapping community detection.

### **Metrics for Community Analysis: A Survey** (*Aug 2015- Present*)

Working with Dr. Tanmoy Chakraborty, Dr. Niloy Ganguly and Dr. Animesh Mukherjee to submit a survey paper to summarise, the state-of-the-art metrics proposed for the detection and the evaluation of community structure.

### **Research Challenges in Bibliographic Dataset: A Linguistic Perspective** (*Dec 2015- Present*)

Working with Dr. Tanmoy Chakraborty on a challenge paper to summarise the research challenges involved for various natural language processing task in bibliographic text as the performance of the state-of-the-art approaches in resolving these problems is inadequate owing to the challenges presented by the nature of scientific articles. (*under review at ACM Journal of Data and Information Quality*)

### **Sandhan, Cross Language Information Access** (*Jan 2015- Present*)

A multi-institutional project funded by Department of Defence (Govt. of India) where my responsibilities are to contribute to the query processing pipeline which involves development of query translation and transliteration engine to enable cross language search in 9 different Indian Languages.

### **RecSys Challenge 2014: User Engagement as Evaluation** (*May 2014- Aug 2014*)

Participated in the RecSys 2014 challenge where the task is to predict the user engagement in tweets (retweet and favorite) for items. The approach involved extraction of interesting hand-crafted features, including usage of external data from IMDb and experimenting with various supervised learning techniques.

### **Graph Analysis and Community Detection in Citation Network** (*May 2012- Jul 2012*)

Worked under the supervision of Dr. Tanmoy Chakraborty, Dr. Niloy Ganguly and Abhijnan Chakraborty on a novel algorithm OverCite, for overlapping community detection in a citation network.

## Relevant Course Work:

Web Mining	Information Retrieval and Extraction
Natural Language Applications	Data Warehousing and Mining
Statistical Methods in AI	Machine Learning

## Extra Curricular Activities:

- Attended a short-term course and workshop on Machine Learning and Complex Networks at IIT Kharagpur. (*February, 2015*)
- Participated in various IR shared tasks like SemEval 2015, RecSys 2014, RecSys 2015.
- Reviewer for MIKE 2015, ICON 2015.
- Mentor for LearnIT Girl, a mentorship program for women around the globe for 2015 and 2016