

Satyaki Sikdar

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CONTACT INFORMATION	310 Stinson-Remick Hall Notre Dame, IN 46556, USA	https://sites.nd.edu/ssikdar/ssikdar@nd.edu
RESEARCH INTERESTS	Network science, data mining, and machine learning	
EDUCATION	University of Notre Dame , Notre Dame, IN	
	Ph.D., Computer Science & Engineering Adviser: Dr. Tim Weninger	2017 –
	Heritage Institute of Technology , Kolkata, India	
	B.Tech., Computer Science & Engineering, GPA: 8.8/10 Thesis: <i>Learning Models for Influence Maximization</i> Advisers: Dr. Partha Basuchowdhuri and Dr. Subhashis Majumder	2013 – 2017
RESEARCH EXPERIENCE	Graduate Research Assistant Department of Computer Science & Engineering, University of Notre Dame Supervisor: Dr. Tim Weninger	May 2018 –
	Research Assistant Department of Computer Science & Engineering, Heritage Institute of Technology, Kolkata Supervisors: Dr. Partha Basuchowdhuri and Dr. Subhashis Majumder	Apr 2015 – Jul 2017
JOURNAL PUBLICATIONS	J1. Basuchowdhuri, P., Sikdar, S. , Nagarajan, V., Mishra, K., Gupta, K., and Majumder, S. <i>Fast Detection of Community Structures using Graph Traversal in Social Networks</i> , 2017. Knowledge and Information Systems (KAIS). arXiv:1707.04459.	
CONFERENCE PUBLICATIONS	C2. Pennycuff, C., Sikdar, S. , Vajiac, C., Chiang, D., and Weninger, T., 2018, June. <i>Synchronous Hyperedge Replacement Graph Grammars</i> . International Conference on Graph Transformation (ICGT), 2018.	
	C1. Basuchowdhuri, P., Sikdar, S. , Shreshtha, S., and Majumder, S., 2016, March. <i>Detecting Community Structures in Social Networks by Graph Sparsification</i> . In Proceedings of the 3 rd IKDD Conference on Data Science, 2016 (p. 5). ACM.	
PAPERS UNDER REVIEW	JR1. Sikdar, S. , Hibshman J., and Weninger, T. <i>Modeling Graphs with Vertex Replacement Grammars</i> , under review in the Journal Track of ECML-PKDD, 2019.	
AWARDS	Travel Awards ACM IKDD Conference on Data Science 2016	Mar 2016
	Student Awards — Heritage Institute of Technology, Kolkata Best Student Award for Academic Excellence	Jul 2017

PROJECTS

- Modelling graphs with Vertex Replacement Grammars** 2018 –
 Created a graph framework and related algorithms that extracts structural features from a given graph and uses that to generate a family of topologically similar graphs. Tools used: Python with the NetworkX library. ([Github repository](#))
- Synchronous Hyperedge Replacement Graph Grammars** 2017 – 2018
 Created a graph framework and related algorithms that generalizes language translation for modeling temporal graphs. Tools used: Python with the NetworkX library. ([Github repository](#))
- Learning Models for Influence Maximization** 2016 – 2017
 Designed a recommender system for recommending restaurants to users based on the topology of the underlying bipartite network of users and restaurants. The data was crawled from a popular restaurant review site. Tools used: Python with Selenium, BeautifulSoup, Pandas, Numpy, NetworkX, and SciPy libraries.
- Community Detection in Social Networks** 2015 – 2017
- Using Graph Traversal Techniques*
 Worked on implementation and testing of a novel community detection algorithm that uses a mix of breadth-first and depth-first traversals for fast unveiling of communities. Tools used: C, C++, and shell scripts. ([Github repository](#))
- Using Graph Sparsification*
 Worked on design, implementation, and testing of a fast community detection algorithm that uses a geometric t -spanner to identify the edges with high edge betweenness and thus unraveling the community structure. Tools used: C++ with Boost Graph Library, Python with NetworkX library. ([Github repository](#))

PRESENTATIONS **Poster Presentations**

- Modeling Graphs with Vertex Replacement Grammars, SIAM Workshop on Network Science 2019, Snowbird, UT, USA May 2019
- Modeling Graphs with Vertex Replacement Grammars, NetSci 2019, Burlington, VT, USA May 2019
- Synchronous Hyperedge Replacement Graph Grammars*, Midwest Speech & Language Days, 2018, Notre Dame, IN, USA May 2018

Paper Presentations

- Synchronous Hyperedge Replacement Graph Grammars*, ICGT Jun 2018
- Detecting Community Structures in Social Networks by Graph*, CoDS Mar 2016

SIGKDD, ACM Student Chapter, Heritage Institute of Technology

- Introduction to Support Vector Machines Apr 2017
- Density Based Spatial Clustering of Applications with Noise Feb 2017
- Introduction to Decision Trees Nov 2016
- A Friendly Introduction to Random Networks Feb 2016

Invited Talks at Vidyasagar College, Kolkata

- An Introduction to Community Detection in Social Networks Jan 2016
- Massive Open Online Courses Sep 2014

TEACHING EXPERIENCE	<p>Graduate Teaching Assistant Spring 2018 <i>CSE 30151 - Theory of Computing</i> Instructor: Dr. David Chiang Department of Computer Science & Engineering, University of Notre Dame Graded assignments, exams, held office hours, and designed a tutorial on drawing finite state machine with TikZ library</p> <p>Graduate Teaching Assistant Fall 2017 <i>CSE 30151 - Theory of Computing</i> Instructor: Dr. Peter M. Kogge Department of Computer Science & Engineering, University of Notre Dame Graded assignments, exams, held office hours, and designed a tutorial on drawing finite state machine with TikZ library</p> <p>Lecture Series <i>Introduction to Programming in Python</i> Fall 2016, 2015 A 15 hour introductory course on programming in Python</p> <p>Workshops <i>Introduction to Programming in Python</i> Apr 2016, 2015 A two-day introductory hands-on workshop on programming in Python</p>
SERVICE	<p><i>Subreviewer</i>, KDD 2019 2019 <i>Subreviewer</i>, The Web Conference 2019 2018 <i>Reviewer</i>, Data Mining and Knowledge Discovery (DMKD) 2018 <i>Reviewer</i>, International Journal of Cooperative Information Systems (IJCIS) 2018 <i>Subreviewer</i>, AAAI 2018 2017 <i>Chair</i>, ACM Student Chapter, Heritage Institute of Technology 2016 – 2017 <i>Vice Chair</i>, ACM Student Chapter, Heritage Institute of Technology 2015 – 2016 <i>Secretary</i>, ACM Student Chapter, Heritage Institute of Technology 2014 – 2015 <i>Student Member</i>, ACM 2013 –</p>
COMPUTER SKILLS	<p>Advanced Python with NetworkX, matplotlib, Selenium, and BeautifulSoup libraries</p> <p>Intermediate C, C++, Boost Graph Library, L^AT_EX with Beamer class, Pandas, SQL, Shell scripts</p> <p>Basic Java, C#, WEKA, PySpark</p>
REFERENCES	<p>Tim Weninger Phone: +1-574-631-6770 Assistant Professor Department of Computer Science & Engineering, University of Notre Dame E-mail: tweninger@nd.edu</p>

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