

SHEBUTI RAYANA

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EDUCATION

Stony Brook University

December 2017

PhD in Computer Science

Research Topic: Ensemble and Multimodal Learning for Anomaly Mining

Supervisor: Dr. Leman Akoglu

Stony Brook University

May 2017

MSc in Computer Science

Coursework: Analysis of Algorithms, Artificial Intelligence, Machine Learning, Computer Architecture, Discrete Mathematics, Data Mining, Computational Biology and Financial Time Series Analysis

Bangladesh University of Engineering and Technology (BUET)

March 2009

BSc in Computer Science and Engineering

Thesis: Topological Book Embeddings of Planar Graphs

Supervisor: Prof. Dr. Md. Saidur Rahman

Selected coursework: Graph Theory, Artificial Intelligence, Databases, Algorithms, Simulation and Modeling, Operating System

RESEARCH INTERESTS

Data mining, Large-scale graph mining, Event and Anomaly detection, Machine Learning and Graph Algorithms

AWARDS & HONORS

- NSF Travel Award for SIAM Data Mining Conference, 2016
- IACS Young Writer's Award, 2015
- SIAM SDM 2015 Student Travel Grant
- CRA-W Graduate Cohort Workshop Travel Award, 2015
- CS Fellowship from Computer Science Department, Stony Brook University
- University Deans List Scholarship in all 4 levels from BUET
- Dhaka Board Scholarship (Talent Pool) for the result of HSC
- Gold Medal from Ideal School and College for the result of HSC

PUBLICATIONS

Conference

Shebuti Rayana and Leman Akoglu, “*Less is More: Building Selective Anomaly Ensembles with Application to Event Detection in Temporal Graphs*” - SIAM SDM, Vancouver, BC, Canada, April 2015

Shebuti Rayana and Leman Akoglu, “*Collective Opinion Spam Detection: Bridging Review Networks and Metadata*” - ACM SIGKDD, Sydney, Australia, August 2015

Shebuti Rayana and Leman Akoglu, “*Collective Opinion Spam Detection using Active Inference*” - SIAM SDM, Miami, Florida, USA, May 2016

Shebuti Rayana, Wen Zhong and Leman Akoglu, “*Sequential Ensemble Learning for Outlier Detection: A Bias-Variance Perspective*” - ICDM, 2016

Journal

Shebuti Rayana and Leman Akoglu, “*Less is More: Building Selective Anomaly Ensembles*” - ACM Transactions on Knowledge Discovery from Data, May, 2016

Workshop

Shebuti Rayana and Leman Akoglu, “*An Ensemble Approach for Event Detection and Characterization in dynamic Graphs*” - ACM SIGKDD 2nd Workshop on Outlier Detection and Description (ODD²@KDD2014), New York, USA

Shebuti Rayana and Leman Akoglu, “*Collective Opinion Spam Detection: Bridging Review Networks and Metadata*” - Workshop on Information in Networks (WIN), New York, USA, October 2015

RESEARCH & PROJECTS

- **iCARE:** Isolation based sequential outlier ensemble design with multi-phase aggregation.
- **CARE:** Sequential outlier ensemble reducing bias and variance.
- **Spam Detection using Active Inference:** Incorporating active inference in “collective opinion spam detection” to improve performance further.
- **Collective Opinion Spam Detection:** Identifying and integrating cues from language, behavior and networks for online review data for spam detection.
- **SELECT:** A Selective Ensemble Learning for anomaly detECTION in application to event detection in large scale temporal graphs.
- **Event Detection:** Designed an Ensemble Approach for Event Detection and Characterization in dynamic graphs.
- **Turbulence detection in spacecraft:** Detecting anomalous events (due to turbulence) from NGC simulated 1553 bus spacecraft message dataset
- **Breaking Malicious Redirect Infrastructure:** Disabling malicious redirect chains by removing spam links.
- **PacBio/Nanopore De Novo Genome Assembly:** Efficient overlap detection for de novo assembly of genome for PacBio and Nanopore technologies (Course project in Computational Biology course).
- **A portfolio of 15 stocks of top IT companies:** Stock Analysis using autoregressive models, finding causality using Granger causality test and vector autoregressive modeling, forecasting and event detection in stock market (Course Project in Financial Time Series Analysis Course).
- Object Detection on Pascal VOC2007 data set using Selective Search Method and SVM for object classification in Machine Learning course.
- Worked on Topological book embedding with the minimum number of spine crossings” with Prof. Dr. Md. Saidur Rahman.

WORK EXPERIENCE

Stony Brook University
Research Assistant Professor
Computer Science Department

August 2017 - May 2018
Stony Brook, NY

Teaching:

- Data Structures
- Introduction to Programming in C
- Intermediate Programming in C and C++
- Legal, Social, and Ethical Issues in Information Systems

Stony Brook University
Research Assistant
DATA Lab, Computer Science Department

August 2015 - August 2017
Stony Brook, NY

IBM Thomas J. Watson Research Center
Research Intern
Information Security Group

May 2015 - August 2015
Yorktown Heights, NY

Stony Brook University
Graduate Research Assistant
DATA Lab, Computer Science Department

June 2013 - May 2015
Stony Brook, NY

Stony Brook University
Teaching Assistant
Computer Science Department

August 2012 - May 2013, Fall 2014
Stony Brook, NY

Courses:

- Discrete Mathematics
- Data Mining

University of Asia Pacific (UAP)
Lecturer (Full-time)
Department of Computer Science and Engineering

April 2010 - July 2012
Dhaka, Bangladesh

Bangladesh University of Engineering and Technology (BUET)
Lecturer (Part-time)
Department of Computer Science and Engineering

Fall 2010
Dhaka, Bangladesh

State University of Bangladesh (SUB)
Lecturer (Full-time)
Department of Computer Science and Engineering

May 2009 - April 2010
Dhaka, Bangladesh

TECHNICAL SKILLS

Programming Languages: C/C++, C#, Java, python, Assembly Language (Intel 8086), SystemC, Prolog, SQL, HTML.

Applications Software and Tools: Matlab, R, weka, Oracle, MySQL, LaTeX, OpenGL, Gephi, MongoDB.

Operating Systems: LINUX, Windows.

REFERENCES

Available on demand.