

SHEBUTI RAYANA

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EDUCATION

Stony Brook University

August 2012 - present

PhD in Computer Science Department

Expected date of graduation: Summer 2017

CGPA: 3.87 out of 4.00

Research Topic: Ensemble and Multimodal Learning for Anomaly Mining

Supervisor: Dr. Leman Akoglu

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 2004 - March 2009

BSc in Computer Science and Engineering

CGPA: 3.85 out of 4.00

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 *August 2015 - present*
Research Assistant
DATA Lab, Computer Science Department
Stony Brook, NY

IBM Thomas J. Watson Research Center *May 2015 - August 2015*
Research Intern
Information Security Group
Yorktown Heights, NY

Stony Brook University *June 2013 - May 2015*
Graduate Research Assistant
DATA Lab, Computer Science Department
Stony Brook, NY

Stony Brook University *August 2012 - May 2013, Fall 2014*
Teaching Assistant
Computer Science Department
Stony Brook, NY

Courses

- Discrete Mathematics
- Data Mining

University of Asia Pacific (UAP) *April 2010 - present*
Lecturer (on study leave)
Department of Computer Science and Engineering
Dhaka, Bangladesh

Bangladesh University of Engineering and Technology (BUET) *Fall 2010*
Lecturer (Part-time)
Department of Computer Science and Engineering
Dhaka, Bangladesh

State University of Bangladesh (SUB) *May 2009 - April 2010*
Lecturer (Full-time)
Department of Computer Science and Engineering
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.