

CURRICULUM VITAE

Sheikh Rabiul Islam

Ph.D. Candidate, Knowledge Discovery Lab

Department of Computer Science

Tennessee Tech University

Cookeville, TN 38501, USA.

Phone: +1 (931) 529 1232 | Email: sislam42@students.tntech.edu , sheikh.rabiul.islam@outlook.com

Website: sheikhrabiul.github.io | LinkedIn: www.linkedin.com/in/srislam | Github: github.com/SheikhRabiul

EDUCATION

- **Ph.D.** (candidate) in Computer Science, *Tennessee Tech University, TN, USA.* 2015 -
Selected coursework: Machine Learning, Data Mining, Big Data, Anomaly and Intrusion
Detection, Intelligent Information Systems, Learning Theory, and Parallel Programming. Spring,2020
- **MS** in Computer Science, GPA 3.89, *Tennessee Tech University, TN, USA.* 2015-2018
- **BSc** in Computer Science, GPA 3.84, *Islamic University of Technology, Bangladesh.* 2007-2010

RESEARCH INTERESTS

- Interpretable and explainable Artificial Intelligence
- Data Mining and Big Data
- Predictive Modeling in Finance and Cyber Security
- Anomaly or Fraud Detection

TOOLS & RELATED SKILLS

- *Programming:* Python, Java, C++, PHP, MPI, OpenMP, CUDA, Javascript, and R.
- *Data Science:* Proficient in Scikit-learn, NLTK, Pandas, and Flask; Familiar with Tensorflow, Keras, Caffe, D3.js, Highchart, Matlab, and Weka.
- *Database:* Oracle, MySQL, PostgreSQL, and Sqlite3.
- *Certification & Training:*
 - High-Performance Computing Workshop at ORNL
 - Oracle Database SQL Certified Expert (2013)
 - Red Hat Certified Engineer (RHCE) training course at Base Ltd

EXPERIENCE

- *Graduate Research Assistant*, Tennessee Tech University: Currently working on improving interpretability and explainability of Artificial Intelligence based complex models. 2018-present
- *Advanced Short-Term Research Intern*, Oak Ridge National Laboratory (ORNL), USA: Worked on an automated and generalized malware detection technique from host logs. Summer,2018
- *Graduate Teaching Assistant*, Tennessee Tech University: Worked on different research and software development project. Also, instructed some undergraduate labs (C++, Database). 2015-2018
- Worked independently and collaboratively in multiple software development projects during my four years of fulltime job in two different telecommunication company in Bangladesh. 2011-2015

AWARD

- Ivanhoe Fellowship 2017
- Student Travel Award, ACM SIGKDD 2019

PUBLICATIONS

2019

- **Sheikh Rabiul Islam**, William Eberle, Sheikh K. Ghafoor, Ambareen Siraj, and Mike Rogers, "Domain Knowledge Aided Explainable Artificial Intelligence for Intrusion Detection and Response ", Under review in *IEEE Big Data* 2019. Under review in Conference
- Qian Chen, **Sheikh Rabiul Islam**, Henry Haswell, and Robert A. Bridges, Automated Ransomware Behavior Analysis: Pattern Extraction and Early Detection, *The 2nd International Conference on Science of Cyber Security (SciSec)*, 2019. Conference paper
- **Sheikh Rabiul Islam**, William Eberle, Sid Bundy, and Sheikh Khaled Ghafoor , "Infusing domain knowledge in AI-based "black box" models for better explainability with application in bankruptcy prediction", *KDD 2019, Workshop: Anomaly Detection in Finance*. Conference Paper

2018

- **Sheikh Rabiul Islam**, Sheikh Khaled Ghafoor, and William Eberle, "Mining Illegal Insider Trading of Stocks: A Proactive Approach", *IEEE Big Data*, 2018. Conference Paper
- Md Mosharaf Hossain, Thomas M. Hines, **Sheikh Rabiul Islam**, Sheikh K. Ghafoor, and Ramakrishnan Kannan, "A Flexible-blocking Based Approach for Performance Tuning of Matrix Multiplication Routines for Large Matrices with Edge Cases", *The 2nd Workshop on Benchmarking, Performance Tuning and Optimization for Big Data Applications (BPOD)*, *IEEE Big Data*, 2018. Conference Paper
- **Sheikh Rabiul Islam**, William Eberle, and Sheikh Khaled Ghafoor, "Credit Default Mining Using Combined Machine Learning and Heuristic Approach", *14th Int. Conference on Data Science (ICDATA'18)*, 2018. Conference Paper
- **Sheikh Rabiul Islam**, "An Efficient Technique for Mining Bad Credit Accounts from Both OLAP and OLTP ", *ProQuest Dissertations Publishing*, 2018. 10787567. Masters Dissertation
- Tigstu Dullo, Sudershan Gangrade, Ryan Marshall, **Sheikh R. Islam**, Sheikh Ghafoor, ShihChieh Kao, and Alfred J. Kalyanapu, "The Vulnerability of Critical Energy Infrastructures to Climate Change induced Flooding: A Case Study for the Conasauga River basin", *27th Tennessee Water Resources Symposium*, 2018. Poster/ Abstract

2017

- **Sheikh Rabiul Islam**, William Eberle, and Sheikh Khaled Ghafoor, "Mining Bad Credit Card Accounts from OLAP and OLTP", *ACM International Conference on Compute and Data Analysis (ICDA'17)*, 2017. Conference Paper
- AJ Kalyanapu, TT Dullo, S Gangrade, SC Kao, R Marshall, **SR Islam**, and SK Ghafoor, "Hurricane Harvey Riverine Flooding: Part 1-Reconstruction of Hurricane Harvey Flooding for Harris County, TX using a GPU-accelerated 2D flood model for post-flood hazard analysis", *American Geophysical Union (AGU) Fall Meeting*, 2017. Poster/ Abstract
- Tigstu TSIGE Dullo, Sudershan Gangrade, Ryan Marshall, **Sheikh R Islam**, Sheikh K Ghafoor, Shih-Chieh Kao, and Alfred J Kalyanapu, "A large-scale simulation of climate change effects on flood regime-A case study for the Alabama-Coosa-Tallapoosa River Basin", *American Geophysical Union (AGU) Fall Meeting*, 2017. Poster/ Abstract

2016

- TT Dullo, AJ Kalyanapu, S Gangrade, R Marshall, **SR Islam**, SK Ghafoor, SC Kao, and BL Preston, "Development of an Integrated DHSVM-Flood2D-GPU modeling framework - A Case Study for the Alabama-Coosa-Tallapoosa River Basin", *American Geophysical Union (AGU) Fall Meeting*, 2016. Poster/ Abstract

2012

- Tanzeem Bin Noor, Md Rounok Salehin, **Sheikh Rabiul Islam**, “A clustering scheme for peer-to-peer file searching in mobile ad hoc networks”, *International Journal of Advanced Research in Computer and Communication Engineering*, 2012. Journal Paper

PROFESSIONAL SERVICES

- President, Computer Science Graduate Club 2018-present
- Member, IEEE 2018-present
- Member, Computer Science Student Advisory Council 2018-present

VOLUNTEER ACTIVITIES

- Student Volunteer, 25th ACM SIGKDD Conference 2019
- Participant, Keep Putnam County Beautiful – Clean Commission 2018
- Volunteer and Substitute Mentor, The Governor’s School for Emerging Technologies Summer,2017
- Volunteer, Integrating Parallel and Distributed Computing in Introductory Programming Classes (iPDC) Summer,2016

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