

# Asadullah Hill Galib

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In my Ph.D., I am working on developing novel deep learning algorithms for Spatio-temporal and sequential data with the incorporation of Extreme Value Theory (EVT) and tipping points analysis for climate change. I am looking for internship opportunities.

## Education

### Ph.D. in Computer Science and Engineering

August 2020 - Present

Michigan State University, MI, USA

Advisor: [Dr. Pang-Ning Tan](#), Domain: Deep Learning, Spatio-Temporal Analysis, Extreme Value Theory, Tipping Points

### M.Sc. in Software Engineering

January 2019 - December 2020

University of Dhaka, Dhaka, Bangladesh

Thesis: Significant Features Analysis For Android Malware Detection Using Machine Learning Techniques

### B.Sc. in Software Engineering

January 2015 - December 2018

University of Dhaka, Dhaka, Bangladesh

## Technical Skills

**Programming Languages:** Python, Java, C, C++, PHP, JavaScript, Assembly

**Machine Learning & Deep Learning:** PyTorch, Keras, TensorFlow, scikit-learn, pandas, NumPy, MATLAB

**Miscellaneous:** MySQL, Oracle, SQLite, React, jQuery, React Native, Laravel, Selenium, Foritfy, Git, Agile, MVC, SRS

## Experience

### Graduate Teaching Assistant, [Michigan State University \(CSE\)](#)

August 2020 - December 2021

- Lead classes and labs of 260+ students of *CSE 102: Algorithmic Thinking and Programming (Python)*

### Software Developer & Executive Assistant (Internship), [Brain Station 23](#)

January 2018 - June 2018

- Developed from scratch and maintained a web application and a mobile application, using Laravel Framework, PHP, MySQL, React-Native, Redux-Saga, Android Studio, Postman and proper version-controlling (Git, SourceTree).
- Analyzed requirement specification and design of an existing system for re-engineering. Analyzed two e-commerce frameworks.

## Academic and Research Projects ([DETAILS AND FULL LIST](#))

- **Predicting GitHub Issues Lifetime using Machine Learning and Topic Modeling (LDA):** It outperforms previous approach with a high precision and f1- measure. Also, it extracts distinguishable and comprehensible topics from issues. Manuscript Ready.
- **Pre-birth Factors in the Early Assessment of Child Mortality using Machine Learning Techniques:** It achieves an AUC score of 0.947 which outperforms the clinical standards. Also, it assess the relative importance of the factors. Manuscript Ready.
- **Optimizing Search Space in Code Smells Detection using a Novel Metric:** Significantly reducing search space (i.e., 93% to 21%) using a novel metric called - NCPC, while maintaining the performance of code smells detection. Manuscript Ready.
- **Analyzing co-authorship network: Centrality Measure, Link Prediction, and Community Detection:** It analyzes a network of researchers co-authorship relations with eigenvalue centrality, logistic regression and a community detection algorithm.
- **Image-to-Image Translation using Conditional GAN:** It generates colored images from sketches using a generative model - Conditional GAN. It incorporates the architecture and guidelines proposed by a CVPR 2017 study ([Isola et al.](#)).

## Publications

- **Galib, A. H.**, McDonald, A., Wilson, T., Luo, L., & Tan, P. N. (2022, Feb.). Forecasting Block Maxima in Time Series with Varying Temporal Data Availability using Deep Neural Networks. Manuscript **submitted to KDD 2022**.
- Wilson, T., McDonald, A., **Galib, A. H.**, Luo, L., & Tan, P. N. (2022, Feb.). Beyond Point Prediction: Capturing Zero-Inflated & Heavy-Tailed Spatiotemporal Data with Deep Extreme Mixture Models. Manuscript **submitted to KDD 2022**.
- **Galib, A. H.**, McDonald, A., Wilson, T., Luo, L., & Tan, P. N. (2021, Dec.). DeepExtrema: A Deep Learning Approach for Forecasting Block Maxima in Time Series Data. Manuscript **submitted to IJCAI 2022**.
- **Galib, A. H.**, & Hossain, B. M. (2020, Jul.). Significant API Calls in Android Malware Detection (Using Feature Selection Techniques and Correlation Based Feature Elimination). (**SEKE 2020**) (pp. 566-571).
- **Galib, A. H.**, & Hossain, B. M. (2019, Dec.). A Systematic Review on Hybrid Analysis using Machine Learning for Android Malware Detection. In 2019 2nd International Conference on Innovation in Engineering and Technology (pp. 1-6). IEEE.
- Yasir, R. M., Asad, M., **Galib, A. H.**, Ganguly, K. K., & Siddik, M. S. (2019, May). GodExpo: an automated god structure detection tool for Golang. In Proceedings of the 3rd International Workshop on Refactoring (**IWOR 2019**) (pp. 47-50). IEEE.

## Leadership Activities

**Organizer**, First Software Industry-Academia Collaboration Session with 10 leading companies (2017), Boot Camp on technology for peace, Seminar on the fourth industrial revolution, Workshops on secured internet protocol and IT awareness for females.

**Vice President & Treasurer**, IIT Software Engineers' Community, University of Dhaka