Tahmidul Islam

- **Address:** 301 S Bull St Apt #E, Columbia, SC, 29205
- **Email:** tahmidstat@gmail.com • **Phone:** 4128775255 • **Linkedin:** https://www.linkedin.com/in/tahmidul
- **Website:** http://people.stat.sc.edu/islamt • **Github:** https://github.com/tahmid-usc

Research Interests

Machine Learning, Functional Data, Longitudinal Data, Bayesian Analysis

Education

University of South Carolina • Columbia, SC — August 2016 – 2021
Doctor of Philosophy • *Statistics*

University of Dhaka • Dhaka, Bangladesh — August 2014 – March 2016
Master of Science • *Statistics*

University of Dhaka • Dhaka, Bangladesh — January 2010 – August 2014
Bachelor of Science • *Statistics*

Work Experience

Graduate Assistant — University of South Carolina — August 2016 – Present
Columbia, SC

- Lecture and lab instructor of undergraduate courses at the Dept. of Statistics
- Duties: Prepare lecture, lab and examination materials, deliver lecture, manage course using Blackboard and Pearson's MyLab & Mastering, train new graduate assistants
- Taught courses: STAT 201: Elementary Statistics (72 students each semester) and STAT 509: Statistics for Engineers
- Worked as a research assistant in the Dept. of Biostatistics and Epidemiology, USC where investigated association between small for gestation age and infant mortality using US birth and death record data

icddr,b – Statistical Officer — Sep 2015 – Jan 2016
Dhaka, Bangladesh

- Gathered, maintained, cleaned and analyzed health surveillance system data
- Consulted public health researchers with research design, sample size calculation and statistical methodologies

Projects

Bayesian framework for analyzing sparse functional data using Gaussian process – Ph.D. Dissertation

- Develop a unified Bayesian framework for modeling sparse and regular functional data and obtain an estimate of the mean function with uncertainty quantification
- Approximation free efficient computation for non-sparse (regular) functional data
- Supervised classification for functional data
- Smoothing and classification of spinal bone mineral density measurement data
- Smoothing and classification of genes related to phases of the yeast cell cycle from temporal gene expression data
- Speech recognition: classifying phonemes from digitized speech

Computationally efficient Gaussian process regression for data with replications

- Perform GP computation on unique grid points only when replication occurs, reducing computational complexity depending on the number of grid points

COVID-19 cases and deaths projection using Gaussian process regression with Richard's curve prior

- Taking advantage of the option to insert prior mean function in GP regression to project the cumulative number of confirmed cases and deaths in the US (by state) (https://tahmid-usc.github.io/covidGP)

Forecast electricity power load in Texas with TBATS model
Predict breast cancer from the digitized image of fine needle aspirate of breast mass
Frailty and GLMM for analyzing under-5 mortality and child malnutrition in Bangladesh
Kaggle: Otto Group Product Classification Challenge
Kaggle: Predict annual restaurant sales based on objective measurements
Kaggle: Handwritten Digit Recognition

Technical Skills

- Programming languages and Packages: R, SAS, stata, SPSS, SQL, Git, Bash, Markdown, SLURM (High Performance Computing)
- Other computer experience: MS Office Suite

Publications/Conferences

- Islam, T., Chakraborty, P., Lynch, J., and Grego, J. (2019). Bayesian Smoothing and Classification of Sparse Functional Data Using Gaussian Process. Poster session (Bayesian Methods) at the JSM, Denver, CO
- Islam, T. (2019). Learning Images with Gaussian Process Regression and Application to Classification. Poster session (Machine Learning) at the ENAR, Philadelphia, PA
- Islam, T., Rabbani, M., and Bari, W. (2016). Analyzing child malnutrition in Bangladesh: Generalized linear mixed model approach. Dhaka University Journal of Science

Awards

- Outstanding Graduate Assistant Award 2018
- Outstanding First-Year Graduate Student Award 2017
- National Science and Technology Fellowship; Bangladesh Government

Professional Society Memberships

- American Statistical Association (ASA)
- International Biometric Society (ENAR)

Graduate Courses

- Probability theory I & II
- Mathematical Statistics I & II
- Data Analysis I & II
- Stochastic Processes
- Advanced Inference
- Nonparametric Inference
- Large Sample Theory
- Categorical Data Analysis
- Computing with R and SAS
- Linear Models
- Biostatistics
- Artificial Intelligence
- Statistical Consulting