

Education

University of Washington

Seattle, USA

Ph.D. in Biostatistics

September 2022 - Present

- 4th year PhD Student. [Supervised by: [Dr. Jeff Leek](#)]

University of Dhaka

Dhaka, Bangladesh

Master of Science (M.S.) in Applied Statistics

2021 - 2022

- **M.S. Thesis:** On the estimation of robust variance in penalized GEE for nearly separated longitudinal binary data with small samples. [Supervisor: [Dr. M Shafiqur Rahman](#)]
- **Relevant Coursework:** Machine Learning; Bayesian Methods; Causal Inference; Longitudinal Data; Signal Processing; Spatial Statistics.

University of Dhaka

Dhaka, Bangladesh

Bachelor of Science (B.S.) in Applied Statistics

2017 - 2021

- **Relevant Coursework:** Generalized Linear Models (GLMs); Survival Analysis; Time Series and Forecasting; Bayesian Statistics; Sampling Methods; Multivariate statistics: PCA, FA, Classification, Clustering; Epidemiology; Population Studies and Demography; Economics; Actuarial Statistics; Econometric Modeling.
- **B.S. Project:** Impact of child's cognitive and social-emotional difficulties on child abuse using classification trees and generalized linear models [[published](#)]

Research Experience

Graduate Research Assistant and ITCR Resource Developer

September 2022 - Present

Data Science Lab (FH DaSL), Fred Hutch Cancer Research Center

- Supervisor: [Jeff Leek](#)
- **Project 1:** Evaluating impact of biomedical research software
 - **Paper:** Best practices to evaluate impact of biomedical research software: metric collection beyond citations [[published](#)]
 - **Web resource development:** Developed web resources platform for Information Technology for Cancer Research (ITCR).
- **Project 2:** *Valid statistical inference with Machine Learning/Artificial Intelligence generated synthetic data*
 - Paper 1:** Do We Really Even Need Data? [[arXiv preprint](#)]
 - Paper 2:** *ipd*: an R package for conducting inference on predicted data [[published](#)]
 - Paper 3:** A Moment-Based Generalization to Post-Prediction Inference [[manuscript under review](#)]
 - Paper 4:** Valid Inference after Predicting Survival (VIPS) with missingness and censoring [[working paper](#)]
 - Paper 5:** A modern look at drawing Statistical Inference on ML/AI generated Synthetic Data [[Harvard Data Science Review: working paper](#)]
 - Paper 6:** Early-Stage Inference on Cancer Survival Rates in the National Lung Screening Trial (NLST) [[working paper](#)]
- **Project 3:** *Multimodal Deep Learning for Pulmonary Embolism Screening Using Chest X-Ray and Electrocardiogram Data using MIMIC-IV* [[working paper](#)]
- **Software development:**
 - **R-package 1:** *ipd* Performs statistically valid and efficient inference with predicted data (IPD) with available methods [[github](#)] [[CRAN](#)]
 - **R-package 2:** *scorcher* Provides high-level functionality for building and fitting deep learning models using *torch* library in R [[github](#)]

- **Project:** Early Childhood Development of Bangladeshi Children
- **Responsibilities:** Data curation and analysis; manuscript drafting and report preparation.
- Supervisors: [Dr. Mohaimen Mansur](#) and [Dr. Iftakhar Alam](#)

Independent and Collaborative Research Projects

- **Independent Project:** Analysis of treatment effect in the presence of covariate-dependent missing data in Cluster Randomized Trials (CRT), mentored by [Dr. Anower Hossain](#), University of Warwick.
- **Collaborative public health project topics:** COVID-19, BMI and Cardiometabolic diseases, Intimate partner violence (IPV), women's reproductive healthcare, children and adolescent health, Child abuse.

Publications

Published

‡ student-supervised paper

- Salerno S, Miao J, **Afiaz A**, Hoffman K, Neufeld A, Lu Q, McCormick TH, Leek JT. (2025) ipd: An R Package for Conducting Inference on Predicted Data **Bioinformatics**. DOI: [10.1093/bioinformatics/btaf055](https://doi.org/10.1093/bioinformatics/btaf055)
- Jitu MHI‡, **Afiaz A**, Biswas RK (2025). More than just visits: Timing, frequency, and determinants of effective antenatal care in Bangladesh - BDHS 2007 to 2017-18. **PLOS One**, 20(5), e032168. DOI: [10.1371/journal.pone.0321686](https://doi.org/10.1371/journal.pone.0321686)
- **Afiaz A**, Ivanov A, Chamberlin J, ..., Leek JT, Wright C (2024) Best practices to evaluate the impact of biomedical research software - metric collection beyond citations. **Bioinformatics** 40(8). DOI: [10.1093/bioinformatics/btae469](https://doi.org/10.1093/bioinformatics/btae469)
- Biswas RK, **Afiaz A**, Huq S, Bhuiyan FM, Kabir E (2023). Public opinion on COVID-19 vaccine prioritization in Bangladesh: Who gets the vaccine and whom do you leave out? **Vaccine** 41(34); DOI: [10.1016/j.vaccine.2023.06.050](https://doi.org/10.1016/j.vaccine.2023.06.050)
- Biswas RK, **Afiaz A**, Huq S, Bhuiyan FM, Kabir E (2023). Public opinion on COVID-19 pandemic in Bangladesh: disruption to public lives and trust in government's immunisation performance. **Int J Health Plann Mgmt** 1-16; DOI: [10.1002/hpm.3721](https://doi.org/10.1002/hpm.3721)
- Mansur M, **Afiaz A**, Hossain MS (2021). Sociodemographic risk factors of under-five stunting in Bangladesh: Assessing the role of interactions using a machine learning method **PLOS One**, 16(8), e0256729. DOI: [10.1371/journal.pone.0256729](https://doi.org/10.1371/journal.pone.0256729)
- **Afiaz A**, Arusha AR, Ananna N, Kabir E, Biswas RK (2021). A national assessment of elective cesarean sections in Bangladesh and the need for health literacy and accessibility **Scientific Reports**, 11(1), 1-12. DOI: [10.1038/s41598-021-96337-0](https://doi.org/10.1038/s41598-021-96337-0)
- **Afiaz A**, Biswas RK (2021). Awareness on menstrual hygiene management in Bangladesh and the possibilities of media interventions: using a nationwide cross-sectional survey **BMJ Open**, 11(4), e042134. DOI: [10.1136/bmjopen-2020-042134](https://doi.org/10.1136/bmjopen-2020-042134)
- **Afiaz A**, Masud MS, Mansur M (2021). Impact of child's cognitive and social-emotional difficulties on child abuse: Does mother's justification of intimate partner violence also play a role?. **Child Abuse & Neglect**, 117, 105028. DOI: [10.1016/j.chiabu.2021.105028](https://doi.org/10.1016/j.chiabu.2021.105028)
- **Afiaz A**, Biswas RK, Shamma R, Ananna N (2020). Intimate partner violence (IPV) with miscarriages, stillbirths and abortions: Identifying vulnerable households for women in Bangladesh. **PLOS One** 15(7): e0236670. DOI: [10.1371/journal.pone.0236670](https://doi.org/10.1371/journal.pone.0236670)
- Biswas RK, **Afiaz A**, Huq S (2020). Underreporting COVID-19: the curious case of the Indian subcontinent. **Epidemiology and Infection**, 148, E207. DOI: [10.1017/S0950268820002095](https://doi.org/10.1017/S0950268820002095)
- Biswas RK, Huq S, Afiaz A, Khan HT (2020). A systematic assessment on COVID-19 preparedness and transition strategy in Bangladesh. **Journal of evaluation in clinical practice**. 26(6):1599-611. DOI: [10.1111/jep.13467](https://doi.org/10.1111/jep.13467)
- Biswas RK, Huq S, **Afiaz A** (2020). Relaxed lockdown in Bangladesh during COVID-19: should economy outweigh health? **International Journal of Health Policy and Management**, 9(11), 488-490; DOI: [10.34172/ijhpm.2020.98](https://doi.org/10.34172/ijhpm.2020.98)

Pre-prints/under review

- Hoffman K, Salerno S, **Afiaz A**, Leek JT, McCormick TH (2024). Do We Really Even Need Data? ([arXiv pre-print](#))
- Salerno S, Hoffman K, **Afiaz A**, Leek JT, McCormick TH (2024). A Moment-Based Generalization to Post-Prediction Inference ([Manuscript under review](#))
- Jitu MHI, Biswas RK, **Afiaz A**, (2024). The joint effect of mother and child's functional difficulties on anxiety and depression among children ([Manuscript accepted](#))
- Biswas RK, **Afiaz A**, Jitu MHI, Chowdhury B, Sultana S, Moosa A, Kabir E, Bhowmik J, Koemel NA, Fontana L (2025). Prevalence of hypertension and diabetes in Bangladesh: Identifying the unaware and misinformed from the recent national survey ([Manuscript under review](#))
- Biswas RK, **Afiaz A**, Koemel NA, Fontana L (2025). Re-evaluating BMI Thresholds for Cardiometabolic Risk in South and Southeast Asia: Insights from India's National Health Survey ([Manuscript under review](#)).

Teaching Experience

Graduate Teaching Assistant

University of Washington

September 2024 - June 2025

- BIOST 511: Medical Biometry I (Autumn 2024)
- BIOST 512: Medical Biometry II (Winter 2025)
- BIOST 513: Medical Biometry III (Spring 2025)

Guest Lecturer

Department of Biostatistics, University of Washington

May 2025

- BIOST 513: Medical Biometry III
 - Introduction to Time-dependent Cox Proportional Hazards Model
 - Immortal time bias in survival analysis

Graduate Student Tutor

Institute of Statistical Research and Training (ISRT), University of Dhaka

January 2022 - June 2022

- **Mathematics and Statistics tutor** for undergraduate courses: ASTAT 101: Elements of Applied Statistics; ASTAT 102: Probability; ASTAT 105: Calculus, ASTAT 107: Linear Algebra, ASTAT 201: Sampling Distributions, ASTAT 203: Statistical Inference; ASTAT 204: Design of Experiments; ASTAT 206: Sampling Methods.

Online Student Instructor and Tutorial Maker

10 Minute School

January 2017 - December 2021

- Created **300+ video tutorials on mathematics and statistics** for national curriculum based students. Available for free on the [YouTube](#) channel of 10 Minute School.
- Conducted **10+ online Live Classes** on Facebook and [YouTube](#) teaching over a million students to date.

Industry Experience

10 Minute School (Edu-Tech)

Dhaka, Bangladesh

Department Lead: Quality Assurance and Control (QAC)

September 2017 - December 2021

- Spearheaded the QAC department with **over 50 employees** for the largest education platform in Bangladesh.
- Successful supervision of creation and review of **19,018 video tutorials, 837 online-based smartbooks and 6,400 academic quizsets**.

Skills

Software skills

- Statistical software: **R** (proficient), **STATA** (intermediate), **SPSS** (intermediate), **SAS** (beginner).
- Proficient in **RMarkdown/Quarto**, **LaTeX** and **Microsoft Office/Google Suite**.

Technical skills

- Data analysis and visualization using **tidyverse** and **ggplot2** packages.
- Creating R-packages using **Roxygen2**.
- Shiny app, website and dashboard building using R.

Grants & Fellowships

Sloan Precision Oncology Technology Dissemination Award (\$250,000)

Fred Hutch, WA, USA

Co-Investigator/Key Personnel

Nov 2025 - Oct 2027

- Title: **Scorcher - Democratizing AI/ML Workflows for Precision Oncology**

Awards & Scholarships

2025	Quazi Motahar Hossain Award and Gold Medal , QMH Foundation, Dept of Statistics and ISRT	University of Dhaka
2023	Biostatistics Retention and Success Scholarship , Department of Biostatistics	Univ of Washington
2022	Pat Wahl Award (\$5,000) , Recognition of commitment to strategic use of online technologies to reach diverse communities for disseminating education.	Univ of Washington
2022	UW SPH Excellence Award (\$10,000) , Awarded by UW School of Public Health	Univ of Washington
2022	Dean's Merit Award , Faculty of Sciences awardee for obtaining the highest GPA (4.0) across all departments in B.S. Honors	University of Dhaka
2022	Govt. Honors Scholarship , Talent pool, ranked 1st in the Faculty of Sciences	University of Dhaka
2021	ISRT Golden Jubilee Gold Medal Award 2021 , for graduating top of the class with GPA (4.0)	University of Dhaka
2019	ISRT Merit Stipend , Institute of Statistical Research and Training	University of Dhaka

Conferences & Presentations

International Conference on Applied Statistics and Data Science (ICASDS) 2025

University of Dhaka, Bangladesh

Oral Presentation (accepted)

28-29 December 2025

- **Talk:** *A Moment-Based Generalization to Post-Prediction Inference.*

45th Conference of the International Society for Clinical Biostatistics (ISCB)

Thessaloniki, Greece

Oral Presentation

21-25 July 2024

- **Award:** Winner - ISCB Conference Paper Award
- **Funding received:** Conference travel, registration, accommodation.
- **Talk:** *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

ENAR 2024 Spring Meeting

Baltimore, MD, USA

Oral Presentation

10-13 March, 2024

- **Funding received:** Conference travel, registration, accommodation.
- **Talk:** *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

2nd International Conference on Applied Statistics (ICAS) 2019

University of Dhaka, Bangladesh

Poster presentation

December, 2019

- **Poster:** *Intimate partner violence (IPV) with miscarriages, stillbirths and abortions: Identifying vulnerable households for women in Bangladesh.*

Research Talks

- **Talk:** *Optimal Sandwich Variance Estimator in Penalized GEE for Nearly Separated Longitudinal Binary Data with Small Samples.*

Professional Services

Academic reviewer

42 reviews for 12 Journals

2023 - Present

- PLOS One (10)
- Midwifery (10)
- Child Abuse & Neglect (7)
- BMJ Public Health (3)
- SAGE Women's Health (2)
- Nature NPJ Women's Health (1)
- Spatial and Spatio-temporal Epidemiology (2)
- Journal of Health, Population and Nutrition (1)
- Journal of Family Violence (1)
- Discover Public Health (3)
- Scientific Reports (1)
- Early Child Development & Care (1)

Professional Affiliations

Member **International Society for Clinical Biostatisticians (ISCB)**, Geneva, Switzerland

2023 - Present

Member **Western North American Region (WNAR)**, International Biometric Society

2023 - Present

Member **Eastern North American Region (ENAR)**, International Biometric Society

2023 - Present

University Services and Activities

Member **Graduate Student Representative**, Dept of Biostatistics, University of Washington

Sep 2022 - Present

Member **Communications & Alumni Relations Committee**, Dept of Biostatistics, University of Washington

Sep 2022 - Aug 2024

Member **Graduate Admissions Committee**, Dept of Biostatistics, University of Washington

Oct 2025 - Sep 2026