Md. Jubayer Hossain

Founder & Executive Director

Center for Health Innovation, Research, Action, and Learning - Bangladesh (CHIRAL Bangladesh)

hossainmj.me@gmail.com | hossainlab.github.io | 0000-0001-9323-4997 | hossainlab | hossainmj

Research Interests

As a community-driven researcher with a Master of Science in Microbiology and a focus on health data science, my work involves the incorporation of advanced data science methods, particularly in the area of health data science, into the fields of disease diagnosis and big data analytics for data-driven healthcare decision-making. My aim is to bridge the gap between computational and experimental methods, foster highly collaborative and productive partnerships to enhance our understanding of complex health issues.

Research Experiences

Center for Health Innovation, Research, Action, and Learning - Bangladesh *Dhaka, Bangladesh*

Founder & Executive Director *January 2023 - Present*

- Develop and communicate the overarching vision, mission, and strategic direction of the organization.
- Ensure alignment of these elements with the organization's long-term goals and societal impact
- Set and reinforce the organizational culture, emphasizing values such as innovation, integrity, and collaboration.

Center for Health Innovation, Research, Action, and Learning - Bangladesh *Dhaka, Bangladesh*

Founder, Management Lead & Data Analyst *June 2020 - January 2023*

- Develop and communicate the overall vision, mission, and strategic direction of the organization
- Provide strong leadership and set the tone for the organization culture and values

International Centre for Diarrhoeal Disease Research, Bangladesh *Dhaka, Bangladesh*

Research Intern, Health Systems and Population Studies Division *February 2022 - June 2022*

- Conducted literature reviews and data analysis to support research projects
- Participated in fieldwork, including data collection and data entry

Curtin University *Australia*

Data Enumerator, School of Allied Health *October 2022 - November 2022*

- Delphi Study on Patient Outcomes Measurement for Interprofessional Tuberculosis Care Bangladesh
- Successfully collected and recorded quantitative and qualitative data from participants, ensuring a comprehensive dataset for the Delphi study

Bio-Bio-1: Bioinformatics Research Discussion Group *Dhaka, Bangladesh*

Team Member, Bioinformatics Group *February 2017 - June 2019*

- Pursued learning opportunities to advance knowledge and take on leadership position
- Contributed to team design training modules and content preparation

Education and Training

Jagannath University *Dhaka, Bangladesh*

Master of Science in Microbiology *January 2019 - January 2020*

- Conducted an in-depth project as part of my master's program, centered on investigating and analyzing a Chikungunya outbreak, showcasing a dedicated commitment to advancing knowledge in the field of public health

Jagannath University *Dhaka, Bangladesh*

Bachelor of Science in Microbiology *January 2016 - January 2019*

- Participated in a cutting-edge project focused on the application of bioinformatics techniques for profiling antibiotic resistance genes within complex metagenomic DNA sequences

Child Health Research Foundation (CHRF) *Dhaka, Bangladesh*

AI in Public Health *September 2023*

- Participated in a comprehensive 4-day workshop focused on utilizing AI techniques in public health research and decision-making
- Recipient of the scholarship, which provided financial support for my enrollment in the 'AI In Public Health' workshop, as part of the Democratizing Public Health Modeling Using AI-based Tools grant by the Bill and Melinda Gates Foundation made to CHRF

Teaching Experience

Center for Bioinformatics Learning Advancement and Systematic Training(cBLAST) *Dhaka, Bangladesh*

Instructor, Health Data Science (Part-time) *August 2023 - Present*

- Designed and developed comprehensive curriculum for health data analysis courses, ensuring relevance to industry trends and best practices.
- Delivered engaging and informative lectures, workshops, and training sessions on health data analysis methodologies and tools.

Center for Health Innovation, Research, Action, and Learning - Bangladesh *Dhaka, Bangladesh*

Lead Instructor *June 2020 - Present*

- Led a team of instructors and educators, providing guidance and mentorship to ensure the delivery of high-quality education.
- Designed and developed comprehensive curriculum for health data analysis courses, ensuring relevance to industry trends and best practices.
- Delivered captivating and informative lectures, workshops, and training sessions on various healthcare topics, ensuring active student participation.

Jagannath University *Dhaka, Bangladesh*

Teaching Assistant, Public Health and Hygiene, Department of Microbiology *October 2022 - December 2022*

- Assisted in the delivery of undergraduate courses in Public Health and Hygiene within the Department of Microbiology.
- Supported faculty and researchers in ongoing public health and hygiene research projects.
- Mentored and advised students on academic and career-related matters, fostering a supportive learning environment.

Center for Health Innovation, Research, Action, and Learning - Bangladesh *Dhaka, Bangladesh*

Program Lead, Research Internship Program *January 2023 - Present*

- Designed a comprehensive curriculum that integrated research methodologies, practical skills, and professional development components.
- Led the recruitment and selection process for program participants, identifying individuals with the potential to excel in research and innovation.
- Mentored and supervised interns throughout their research projects, providing guidance on research methodologies, data analysis, and project management.

Technical Skills

Programming Languages: Python, R, SQL, Julia, JavaScript; **Data Science:** scikit-learn, PyCaret, Dask, PySpark; **GIS & Remote Sensing:** ArcGIS, Geopandas, Xarray, Giovani, Google Earth Engiine; **Analytics Softwares:** SPSS, PowerBI, Microsoft Excel; **Survey Tools:** RedCap, KoboToolBox, EpiCollect, Google Forms; **Academic Writing Tools:** Microsoft Word, LaTeX, Mendeley; **Bioinformatics:** BioPython, Bioconductor, BioPandas, Galaxy, NGS, RNASeq, ssRNASeq; **Miscellaneous Skills:** UNIX, RStudio, Jupyter, VSCode, Rmarkdown, Quarto, Version Control(Git), Web Scraping, APIs

Publications

Journal Articles

Islam, M.W., Shahjahan, M., Azad, A.K., **Hossain, M. J.** Factors contributing to antibiotic misuse among parents of school-going children in Dhaka City, Bangladesh. Sci Rep 14, 2318 (2024). https://doi.org/10.1038/s41598-024-52313-y

Hossain, M. J., Islam, M. W., Munni, U. R., Gulshan, R., Mukta, S. A., Miah, M. S., Sultana, S., Karmakar, M., Ferdous, J., & Islam, M. A. (2023). Health-related quality of life among thalassemia patients in Bangladesh using the SF-36 questionnaire. Scientific Reports, 13(1). https://doi.org/10.1038/s41598-023-34205-9

Hossain, M.J., Towhid, S. T., Akter, S., Shahjahan, M., Roy, T., Akter, B., & Nodee, T. A.(2023). Knowledge and Self-Management Practice Among Diabetic Patients from the Urban Areas in Bangladesh, Journal of Angiotherapy, 7(1), 1-10, https://doi.org/10.25163/angiotherapy.717340

Towhid, S. T., **Hossain, M. J.**, Sammo, M. A. S., & Akter, S. (2022). Perception of Students on Antibiotic Resis- tance and Prevention: An Online, Community-Based Case Study from Dhaka, Bangladesh. European Journal of Biology and Biotechnology, 3(3), 14–19. https://doi.org/10.24018/ejbio.2022.3.3.341

Hossain, M.J., Towhid ST, Sultana S, Mukta SA, Gulshan R, Miah MS (2022). Knowledge and Attitudes towards Thalassemia among Public University Students in Bangladesh. Microbial Bioactives, 5(2), https://doi.org/ 10.25163/microbbioacts.526325.

Accepted Articles

Hossain, M.J., Das, M., Islam, MW., Shahjahan, M., Ferdous, J. (2022).Community Engagement and Social Participation in Dengue Prevention: A Cross-Sectional Study in Dhaka City.(Health Science Reports, Wiley)

Hossain, M.J., Azad,A.K.,Shahid, M.S.B., Shahjahan,M.(2022).Prevalence, Antibiotic Resistance Pattern for Bacteriuria from Patients with Urinary Tract Infections. (Health Science Reports, Wiley)

Under Review

Shanta, A.S.; Islam, N.; Asad, M.A.; Akter, K.; Habib, M.B.; **Hossain, M.J.**; Nahar, S.; Godman, B.; Islam, S. Resistance and Co-resistance of Metallo-Beta-Lactamase Genes in Diarrheal and Urinary Tract Pathogens in Bangladesh. Preprints 2024, 2024021284. https://www.preprints.org/manuscript/202402.1284/v1

Hossain, M.J., Shahjahan, M., Hasan, MM. Two out of five babies are born through c-section in Bangladesh: an urgent call for healthcare policy reforms. https://www.researchsquare.com/article/rs-3936712/v1 (Submitted to BMC Pregnancy and Childbirth)

Hossain, M.J., Das, M. (2024). Improving access to care and treatment for Hirayama patients with disease in Bangladesh: a call for action. (Submitted to Orphanet Journal of Rare Diseases)

Hossain, M.J., Das, M., Munni, U. R. (2024). Urgent call for compulsory premarital screening: a crucial step towards thalassemia prevention in Bangladesh (Submitted to Orphanet Journal of Rare Diseases)

Akter, MM., **Hossain, M.J.**(2023).Food consumption patterns and sedentary behaviours among the university students: a cross-sectional study. http://dx.doi.org/10.21203/rs.3.rs-3207448/v1 (Submitted to Health Science Reports)

Hossain, M.J., Das, M.,Shahjahan, M.,Islam, M.W., Towhid, S.T.(2022).Clinical and hematological manifestation of dengue patients in 2022 outbreak: A tertiary care cross-sectional hospital-based study.(Submitted to Health Science Reports)

Munmun, RN., Bapon, PS., **Hossain, M.J.**, Das, Hasan, MK., Towhid, S.T.(2023).Detection of DEN2 NS1 Antigen and Pre-fibrinogen in Patient Serum Using ELISA from Dhaka Medical College and Hospital, Bangladesh. (Submitted to Health Science Reports)

In Preparation

Hossain, M.J., Islam, S.(2024). One-Health Assessment of Emerging Antimicrobial Resistance Genes (ARGs) in Bangladeshi Livestock, Soil, Environment, and Human: Tackling the Crisis Together

Hossain, M.J. (2024). Urgent Need for Policy Action to Address the Rising Cancer Burden in Bangladesh

Hossain, M.J., Das, M., Maruf, M.F., Akter, M.M., Towhid, S.T. (2023). Premarital Screening for Thalassemia Prevention: A KAP Study in Bangladesh

Hossain, M.J.,Shahariar, M., Barsha, L.H, Sheikh, M.K, Towhid, S.T. (2023). Lack of knowledge and training about antibiotic resistance among community pharmacists

Hossain, M.J., Hasan, M. T., ffat, N., Maruf, M.F., Das, M., Akter, M.M., Shahjahan, M., Islam, W.(2023).Depression, Anxiety, and Stress with Associated Factors among Bangladeshi University Students

Hossain, M.J., Rahmuna, T., Tamim, T.M., Akter, N., Das, M.(2023).Factors influencing the knowledge, attitudes, and practices of biomedical waste management among healthcare professionals in Bangladesh

Hossain, M.J., Das, M.,Akter, M.M., (2023). Knowledge and awareness about breast cancer among school and college-going girls in Bangladesh

Conferences

Poster Presentations

Islam, W, Fariha, FTJ., Ahmed, Z., Biswas, T., Bhuiyan, H., Mahima, JF., Shahjahan., M.,**Hossain, M.J.**(2024). Identifying EN2 as a Promising Therapeutic Target for Glioblastoma multiforme: A multi-omics approach. BCSIR Congress 2023

Akter, S., Rahman, M., Kundu, P., Ferdous, J., **Hossain, M.J.**(2024). In silico Design of sgRNA/CAS9 Expression Vector and HDR Donor Template for Human APC Gene Knock-in. BCSIR Congress 2023

Munmun, RN., Bapon, PS., **Hossain, M.J.**, Das, Hasan, MK., Towhid, S.T.(2023).Detection of DEN2 NS1 Antigen and Pre-fibrinogen in Patient Serum Using ELISA from Dhaka Medical College and Hospital, Bangladesh. 37th Bangladesh Society of Microbiologists Annual Conference, University of Dhaka, Bangladesh, January 2024(Runner-up Poster Presenter Award)

Hossain, M. J., Hosne, J.C.T, Mohima,J.F., Mahedi, T. Exploring TEMPO Applications for Improving Air Quality and Health through Surface Ozone Analysis. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023(Best Poster Presenter Award)

Hossain, M.J., Das, M., Maruf, M.F., Akter, MM., Towhid, S.T. Premarital Screening for Thalassemia Prevention: A KAP Study in Bangladesh.9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023(Best Poster Presenter Award)

Maruf, M.F., **Hossain, M. J.**. Food consumption patterns and sedentary behaviours among university students: a cross-sectional study. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023(Best Poster Presenter Award)

Hossain, M. J.,Rahman,U.S.,Islam,M.K., Khatun, H., Md. Mahadi Hassan; Mosammad Sumaiya. Investigating the Impact of Trace Gasses (Sulfur Dioxide) on Air Quality and Human Health in Dhaka City, Bangladesh. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023

Hossain, M. J., Zahara, S., Evan,M.R., Haider,S., Paul, A., Investigating the Impact of Trace Gasses (NOx) on Air Quality and Human Health in Dhaka City, Bangladesh. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023

Hossain, M.J., Das, M.,Shahjahan,M., Islam, M.W.,Ferdous,J., Towhid, S.T., Community Engagement and Social Participation in Dengue Prevention: A Cross-Sectional Study in Dhaka City. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023

Hossain, M.J., Das, M.,Shahjahan,M., Islam, M.W.,Ferdous,J., Towhid, S.T., Clinical and hematological manifestation of dengue patients in 2022 outbreak: A tertiary care hospital-based study. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023

Hossain, M. J., Mim, N.A., Howlader, G., Mazumder, E.,Bhattacharjee, A. Using NASA Earth Observing Data for Monitoring and Response to Dengue. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023

Hossain, M. J., Mim, N.A., Howlader, G., Mazumder, E.,Bhattacharjee, A. Investigating the Factors Behind the Surge in Dengue Outbreaks in Bangladesh: A Comprehensive Analysis. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023

Shahid,M.S.B., Azad,A.K.,Ferdous,J.,Towhid,S.T., **Hossain, M.J.** Prevalence, Antibiotic Resistance Pattern for Bacteriuria from Patients with Urinary Track Infections. 36th Bangladesh Society of Microbiologists Annual Conference, SUST, Sylhet, Bangladesh, January 2023

Das,M., Azad,A.K.,Barman,A.K.,Holy,N.A.,Akter,N., **Hossain, M.J.** Experiences and Side Effects Following COVID-19 Vaccination in Bangladesh: a cross-sectional community-based e-survey. 36th Bangladesh Society of Microbiologists Annual Conference, SUST, Sylhet, Bangladesh, January 2023

Akter, S.,**Hossain, M. J.**, Towhid, S. T., Sammo, M. A. S.(2022). Perception of Students on Antibiotic Resistance and Prevention: An Online, Community-Based Case Study from Dhaka, Bangladesh. 36th Bangladesh Society of Microbiologists Annual Conference, SUST, Sylhet, Bangladesh, January 2023

Oral Presentations

Nayeem,M.U.,Mrittika,M.A.,**Hossain, M.J.**, Azad,A.K.,Ferdous,J.,Ahmed,S.,Sanyal,S.K., Towhid,S.T. Quantitative Microbial Risk Assessment from Vancomycin-resistant Enterococcus faecalis and Enterococcus faecium from a specific neighbourhood in Dhaka City,Bangladesh. 36th Bangladesh Society of Microbiologists Annual Conference, SUST, Sylhet, Bangladesh, January 2023

Hossain, M. J., Habiba, U., Rozario.C , Tuhin. MLA, Mabsurah. K, Uddin. N. Factors Influencing Heat Stress Risks in Bangladesh. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023

Hossain, M. J., Nowshin, Momtaj, Yeana, IY., Nohor., N. Monitoring Water-borne Disease (Vibrio cholerae) Using NASA Earth Observing Data. 9th International Public Health Conference by Public Health Foundation at Bangladesh Medical Research Council, Bangladesh, November 2023

Projects

Research

For a complete list of projects see my *Personal Website*

Use of Social Media as a Tool to Reduce Antibiotic Misuse *Timeline*

Role: Team Lead, Data Analysis *January 2023 - Present*

- Utilize the dashboard to track social media trends, sentiments, and user engagement surrounding antibiotic use, identifying areas of concern and positive influences.
- Implement engaging social media campaigns, quizzes, and challenges to encourage user participation, fostering a sense of responsibility and shared commitment to reducing antibiotic misuse.

Quantitative Characterization of Risk from Antimicrobial Resistant Critical Pathogen in Dhaka South Neighborhood *Timeline*

Role: Team Lead, Data Analysis *January 2022 - Present*

- Ensure accuracy and reliability through advanced data cleaning and processing for antimicrobial-resistant critical pathogens in Dhaka South Neighborhood.
- Conduct statistical analyses to quantify and characterize the risk, offering actionable insights for public health interventions

Monitoring Water-borne and Vector-borne Disease Using NASA Earth Observing Data *Timeline*

Role: Team Lead, Data Analysis *July 2023 - Present*

- Utilize NASA Earth Observing Data for real-time monitoring of environmental conditions influencing water-borne and vector-borne diseases.
- Integrate satellite data to establish a data-driven early warning system, enhancing proactive public health measures in disease-prone regions.

University Mental Health Screening System (UMHSS) *Timeline*

Role: Team Lead, Data Analysis *January 2022 - Present*

- The main goal of UMHSS is mental health screening, early detection and intervention.
- Conducted a comprehensive mental health screening study involving over 4000 university students

School Mental Health Screening Program (SMHSP) *Timeline*

Role: Team Lead, Data Analysis *January 2022 - Present*

- The main goal of SMHSP is mental health screening of school students, early detection and intervention
- Conducted a comprehensive mental health screening study involving 10 schools in Dhaka city

Care Callers Program (CCP) *Timeline*

Role: Team Lead, Data Analysis *In Progress, Starting: January 2024*

- The purpose of CCP is to support university students with reducing isolation, coping, and depression
- Call assigned partners 1-2 times per week for 10-15 minutes
- During call, provide social support and wellness check

Data Science

For a complete list of data science projects see my *Github*

Calories Burnt Prediction using Machine Learning

The Gradient Boosting Regressor model provides 99% accuracy in prediction of Calories Burn.

Heart Disease Analysis and Prediction Using Machine Learning

The Naive Bayes model achieves a 90% accuracy, precision, and recall rate in the prediction of heart disease detection, demonstrating its effectiveness in the field of machine learning.

Hepatitis Mortality Prediction using Machine Learning

The Decision Tree Classifier model provides a prediction accuracy of 90% in determining hepatitis mortality, highlighting its strong performance in the domain of machine learning.

Machine Learning-Based Prediction of Chronic Kidney Disease: An Analysis of Risk Factors

The Random Forest Classifier model accurately detects chronic kidney disease (CKD) with 100% accuracy by considering important risk factors and patient information. This helps in identifying CKD at an early stage and designing personalized treatment plans for patients.

Improved Breast Cancer Detection using Machine Learning

The Extra Trees Classifier model achieves an impressive accuracy of 95% in predicting breast cancer, making it a highly reliable tool for identifying potential cases of the disease.

Machine Learning-Based Liver Disorder Prediction: Towards Early Detection and Diagnosis

The Logistic Regression model demonstrates a satisfactory accuracy of 78% in predicting liver disorders, indicating its effectiveness as a tool for identifying potential cases of liver-related conditions.

Outbreak Dashboards

Dengue Situation Dashboard for Bangladesh

Designed and deployed a comprehensive Dengue situation dashboard tailored for Bangladesh, facilitating timely and informed decision-making in dengue outbreak management.

Nipah Virus Transmission in Bangladesh

Implemented data visualization techniques to provide real-time insights and support decision-making in public health emergencies.

Monkeypox Data Explorer - Global Distribution

Spearheaded the development of the Monkeypox Data Explorer, a comprehensive tool facilitating the visualization and analysis of global monkeypox distribution trends.

Global Situation of COVID19

This project aims to comprehensively analyze and present the dynamic global situation of COVID-19, encompassing ongoing efforts in vaccination, public health measures, and monitoring new variants to provide a current and informative overview.

Grants

Early Breast Cancer Detection System Using Deep Learning
2024-25 Team Lead (Resource and Innovation Center, Submitted)
Implementing a deep learning system for early breast cancer detection could substantially improve early diagnosis and treatment, addressing the current challenge of late detection in Bangladeshi women.

Utilizing AI and Geospatial Big Data for Early Dengue Warning System
2024-25 Team Lead (Resource and Innovation Center, Submitted)
Implementing a deep learning system for predicting dengue before the epidemic could substantially improve vector control system and reduce Dengue epidemic in Bangladesh.

Courses and Workshops

For a complete list of my courses and workshops visit my personal website

2023-24	**Cancer Bioinformatics**: Instructor (CHIRAL, Bangladesh) The objective of Cancer Bioinformatics course is to teach the application of computational methods to analyze cancer-related biological data for advancing research and treatment.
2023-24	**Biomarker Identification using Machine Learning**: Instructor (CHIRAL, Bangladesh) The objective of Biomarker Identification using Machine Learning is to employ machine learning algorithms to analyze biological data, aiming to identify and validate biomarkers for disease diagnosis, prognosis, and therapy optimization.
2023-24	**Ethics of Large Language Models (LLMs) in Biomedical Research**: Instructor (CHIRAL, Bangladesh) The purpose of this course is to critically examine and explore the ethical considerations surrounding the utilization of Large Language Models (LLMs) in the context of biomedical research, addressing potential implications, biases, and responsible deployment to ensure ethical and equitable advancements in healthcare.
2022-24	**Easystats for Biomedical Researchers**: Instructor (CHIRAL, Bangladesh) This workshop is designed to empower biomedical researchers with the skills and knowledge needed to conduct statistical analyses with ease using R.
2023-24	**Foundations of Health Data Science (FHDS)**: Instructor (CHIRAL, Bangladesh) The purpose of this course is to provide a comprehensive understanding of the foundational principles and methodologies in Health Data Science, equipping students with the knowledge and skills necessary to analyze and interpret health-related data for informed decision-making and advancements in healthcare.
2022-23	**R for Research**: Instructor (CHIRAL, Bangladesh) The purpose of this course is to provide a practical introduction to the programming language R for researchers in any field.
2022-23	**R for Bioinformatics**: Instructor (CHIRAL, Bangladesh) In this course, participants will explore the application of the R programming language in the field of bioinformatics.
2022-23	**Clinical Reporting Using gtsummary**: Instructor (CHIRAL Bangladesh, Bangladesh) One day workshop on publication-ready tables using gtsummary package in R.
2023	**Building Dashboard with R**: Instructor (CHIRAL Bangladesh, Bangladesh) Four day workshop for creating interactive and informative dashboards using the R programming language.
2023	**Machine Learning for Bioinformatics with Python**: Instructor (CHIRAL Bangladesh, Bangladesh) The course equips participants with essential machine learning skills to solve bioinformatics problems.
2020-23	**Python for Health Data Analysis**: Instructor (cBLAST, Bangladesh) This comprehensive 12-week course was designed to equip participants with essential skills to analyze health data using Python.
2020-23	**Data Analysis with R**: Instructor (CHIRAL Bangladesh, Bangladesh) The purpose of this course is to provide a practical introduction to the programming language R for researchers in any field.
2023	**RNA-seq Data Aanalysis with R**: Instructor (CHIRAL Bangladesh, Bangladesh) This course empowers participants to proficiently analyze and interpret RNA-seq data using R.
2023	**Single-Cell RNA-Seq Analysis with R**: Instructor (CHIRAL Bangladesh, Bangladesh) This course caters to researchers and bioinformaticians aiming to unlock insights from single-cell transcriptomics data using R.
2023	**TCGA Data Analysis with R**: Instructor (CHIRAL Bangladesh, Bangladesh) This course equips participants with the skills to analyze and interpret The Cancer Genome Atlas (TCGA) data using R.
2022-23	**Research Data Analysis with SPSS**: Instructor (CHIRAL Bangladesh, Bangladesh) This bootcamp provides a hands-on learning experience, encompassing sequence analysis, genomics, proteomics, and data analysis with widely used bioinformatics tools and software.
2022-23	**Bioinformatics BootCamp**: Instructor (CHIRAL Bangladesh, Bangladesh) This course is tailored for researchers, analysts, and students seeking a strong foundation in utilizing SPSS for data analysis in research projects.
2022-23	**Applied Machine Learning for Healthcare**: Instructor (CHIRAL Bangladesh, Bangladesh) Ten day course on applied machine learning using Python focusing on healthcare problems.

References

Syeda Tasneem Towhid, Ph.D. — *Dhaka, Bangladesh*

Associate Professor, Department of Microbiology, Jagannath University, Dhaka — *Research Supervisor*

- Email: towhidst@mib.jnu.ac.bd

Abul Kalam Azad, Ph.D. *Dhaka, Bangladesh*

Associate Professor, Department of Microbiology, Jagannath University, Dhaka *Research Supervisor*

- Email: akazad88@mib.jnu.ac.bd

Dr. Jannatul Ferdous *Dhaka, Bangladesh*

Associate Professor, Department of Transfusion Medicine, Mugda Medical College and Hospital Dhaka *Clinical Supervisor*

- Email: jannatulferdousk42@gmail.com