

EDUCATION

- **New Mexico Institute of Mining & Technology** Socorro, NM, USA
Master of Science in Applied Mathematics Jan. 2018 - May 2020
- **University of Dhaka** Dhaka, Bangladesh
Master of Science in Applied Statistics Jan. 2014 - Mar. 2015
- **University of Dhaka** Dhaka, Bangladesh
Bachelor of Science in Applied Statistics, Graduated with Honors Jan. 2010 - Mar. 2014

PROGRAMMING SKILLS

- **Languages:** R, Python, MATLAB, C
- **Databases:** MySQL
- **Software:** SAS, ARENA, Minitab, Strom, Maple, **Tableau**, **Latex**, **MS Excel**
- **Libraries:** Scikit-Learn, TensorFlow, Matplotlib, Pandas, Keras, Numpy, seaborn, CVX, quadprog, rpart, lmer4
- **Others:** Problem Solving, Technical Writing, MS Office, Jupyter Notebook

EXPERIENCE

- **New Mexico Institute of Mining & Technology** Socorro, NM, USA
Graduate Teaching Assistant Jan. 2018 - Present
 - Responsible for **Teaching, Grading** of undergraduate courses Introduction to Applied Statistics, Trigonometry & calculus.
 - Taught & graded **Minitab & practice labs** for Introduction to Applied Statistics.
 - Provide support to the students through help room **tutoring** for Probability & Statistics, Linear Algebra, Calculus I, II and III.
- **New Mexico Institute of Mining & Technology** Socorro, NM, USA
Research Assistant Jan. 2018 - Present
 - The developed multilevel model **detects** the significantly changing microbial community overtime period by changing the chemical structure of a component hence **get rid of** this hazardous chemical from potable groundwater.
 - Analysis of the **time profile** of the microbial community by using one way **ANOVA** model
 - Executed **profile plot** for each significant order and family to visualize the time profile of each order and family of the microbe.
 - Performed Gene Set Enrichment Analysis (**GSEA**) & Correlation Adjusted MEan RANk gene set test (**CAMERA**) on prediction & verification of significant order and family of the microbial community.
 - Application of the proposed model to **microbiome data set & simulated data set** for **cross validation**.

PROJECTS

- **Rainfall Runoff Relationship:** The state of New Mexico is interested in the rate and distribution of groundwater recharge. They have used PRISM precipitation data. But to check the validation of the result we compare this with Rain Gauge data of rainfall. Statistical techniques used to analyze, verify, aggregate and post-process conceptual rainfall-runoff models. The result showed there is a significant difference between inferences of PRISM and Rain Gauge count in different locations. [R, Python, Linear Regression, Matrixplot, Pandas, MS Excel & Time series Data set]
- **Voice Command Recognition:** This project hosted by Google to recognize which of 12 commands issued in a 1sec audio file. This work wishes to achieve high prediction accuracy by employing various Machine Learning methods. Eventually, CNN performed better than other methods. Our model could predict Voice command with **90%** accuracy rate. [R, MATLAB, Python, Keras, KNN, SVM, Neural Net, CNN]

- **Phenacetin containing analgesics on kidney function:** The goal of this project is to check the effect of different factors on serum creatinine levels over time. Woman with high phenacetin taking has shown a greater change in serum-creatinine level compared with a woman with low phenacetin intake as an estimated parameter is -1.174e-01. So, high phenacetin taker has increased creatinine level over the year, which indicates **poor** kidney function. [R, Mixed Effect Linear Model, ANOVA, Profile Zeta Plot, Profile Pair Plot]
- **Female student enrollment:** In this project, Female student enrollment in secondary and higher secondary levels in Bangladesh was analyzed to find which part of the country has more enrollment in schools. Not only that, but this work also explored what are the reasons that causing drop out of female students from secondary and higher secondary levels. Finally, Female student enrollment is greater than the male student in both rural and urban areas of **Bangladesh**. [R, Logistic Regression, SQL Database]
- **Low birth weight in Bangladesh:** This project explored the prediction performance of the logistic regression model as well as factors responsible for low birth weight in Bangladesh. **Mother's financial status, residence, educational status, mother's health** are significantly affected the low weight of a newborn baby. [R, STATA, Logistic Regression Model, Calibration Plot, Brier Score, MS Excel]
- **Sensitivity analysis of Daphnids:** There is significant impact of alcohol concentration on **Heartbeat rate** of Daphnia and gravid. [R, One way ANOVA model, Matrix Plot, Residual Plot]
- **Morphology, laboratory culture and molecular identification:** The endeavor was made to identify four genera of daphnids (Daphnia, Ceriodaphnia, Simucephalus, and Scaphiolaberis) from various water bodies of Dhaka city. Clear distinguishable morphological attributes have been confirmed only for Ceriodaphnia sp. and Simocephalus sp.. pH has shown a significant impact on the **longevity** of Ceriodaphnia sp. where another factor dissolved Oxygen has impacted significantly on the longevity of **Simocephalus sp.** [R, multcomp, Levene's Test, Multicollinearity Test, Shapiro-Wilk normality test, Kruskal- Wallis Rank sum Test, MS Excel, Exploratory Analysis, Robust ANOVA]