

# MD MUHTASIM BILLAH

Data Science | Machine Learning | Statistics | Stochastic Modeling

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[medium.com/@mmbillah](https://medium.com/@mmbillah)

## EDUCATION

Ph.D. Mechanical Engineering GPA: 3.93/4.00  
Washington State University Aug 2022

Multiscale Modeling, Stochastic (Monte Carlo) Simulations

M.S. Statistics GPA: 4.00/4.00  
Washington State University Jan 2022

Relational Database, Machine Learning, Statistical Computing

B.S. Mechanical Engineering  
Bangladesh University of Engg. and Tech. Feb 2017

## EXPERIENCE

Research Assistant  
Washington State University

Jan 2020 – Ongoing

Pullman, WA

- Developed and further improved a preexisting probabilistic model based on Monte Carlo method written in C++ and Fortran programming language.
- Utilized the stochastic model for studying key parameters for drug delivery through blood brain barrier (BBB) as an aid for neurodegenerative diseases such as Alzheimer's and Parkinson's.
- Studied design parameters and relevant characteristic properties for manufacturing functional nanoparticle for drug delivery.
- Used finite volume method (FVM) for solving inverse heat transfer problem using Bayesian Inference technique.

Teaching Assistant  
Washington State University

Aug 2018 – Dec 2019

Pullman, WA

## PUBLICATIONS

### Journal Articles

- Al Khan, MM Billah, C Ying, J Liu, P Dutta, *Bayesian Method for Parameter Estimation in Transient Heat Transfer Problem*, International Journal of Heat and Mass Transfer (2020) 166, 120746. [Link](#)
- MM Billah, H. Deng, P. Dutta, J. Liu, *Receptor Mediated Endocytosis with and without Clathrin Dependency: Key Parameters Study*, Nanoscale (Under review).

### Conference Proceedings

- MM Billah, H. Deng, P. Dutta, J. Liu, *Investigation of the Key Parameters Impacting the Receptor Dependent Clathrin-mediated Endocytosis through Stochastic Modeling and Simulations* American Physical Society, (2019) L32-003. [Link](#)

## TECHNICAL SKILLS

Programming: Python R MATLAB

C++ SAS LaTeX Fortran

Data Science Toolbox: SQL PySpark

TensorFlow/Keras Scikit-Learn Pandas

NumPy Matplotlib Plotly Seaborn

git tableau dplyr tidyr tidyverse

caret quanteda ggplot2

## CERTIFICATES

- Deep Learning Specialization (Coursera) [Link](#)
- Machine Learning (Coursera) [Link](#)
- Python Programming (DataCamp) [Link](#)
- Data Scientist with Python (Ongoing)

## DATA SCIENCE PROJECTS

- Top 9% (bronze medal), Kaggle mechanism of action (MoA) detection competition 2020. [Link 1](#) [Link 2](#)
- Recommender systems for Amazon products using sequential and distributed algorithms (PySpark). [Link](#)
- Python based machine learning approach for cancer classification from genomic data. [Link](#)
- Multiple linear regression in R to predict the influence of socio-economic factors on female employment rate. [Link](#)

## AWARDS

- Dean's List Scholarship, Faculty of Mechanical Engineering, BUET 2017.
- University Merit Scholarship, BUET 2016.
- Dean's List Scholarship, Faculty of Mechanical Engineering, BUET 2016.

## TEACHING EXPERIENCE

### Instructor

Daffodil International University

Jan 2018 – Jul 2018 Dhaka, Bangladesh

### Instructor

Sonargaon University

May 2017 – Dec 2017 Dhaka, Bangladesh