resume of **Shamima Hossain**

Personal Website +8801515146790

shamima.hossain2014@gmail.com Mohammadpur, Dhaka, Bangladesh

EDUCATION:

B.Sc. in Electrical and Electronic Engineering, *Bangladesh University of Engineering & Technology (BUET)*, April 2019.
CGPA: 3.67/4.00. Rank: 50/226
Higher Secondary Certificate (Equivalent to 12th grade): *Rangpur Government College, Rangpur*, passing year: 2014, GPA: 5.00/5.00
Secondary School Certificate (Equivalent to 10th grade): *Bogra Government Girls' High School, Bogra*, passing year: 2012, GPA: 5.00/5.00.

RESEARCH INTEREST:

Signal Processing, Image/Video Processing, Data Science, Machine Learning, Deep Learning

RESEARCH EXPERIENCES:

TOPIC: Estimation of Respiration Rate From Photoplethesmogram Signal Using Deep Neural Network (Undergraduate Thesis)
SUPERVISOR: Dr. Md. Kamrul Hasan, Ph.D.

- Used the datasets named **MIMIC II** from Physionet and **Vortal Dataset** to collect the PPG and corresponding respiratory signal
- Reduced cost function by comparing with training labels and applying **Adam** Optimizer Algorithm.
- Two stacked **LSTM layers** with **time-distributed CNN** were used to measure the respiration rate with the necessary learning rate and got **0.91 MAE** and **6.41 RMSE**.
- Compared with five state-of-the-art methods and gained better results in terms of Mean Absolute Error(MAE), RMSE, and Absolute Error Variance.

PUBLICATIONS:

- **Estimation of Blood Glucose Level in a Non-invasive Way from Photoplethesmogram Signal Using Deep Learning**
  Published In: 2019 IEEE International Conference on Biomedical Engineering, Computer and Information Technology for Health (BECITHCON) , Dhaka, Bangladesh
- **Autonomous Trash Collector Based on Object Detection Using Deep Neural Network**
  Published In: TENCON 2019 - 2019 IEEE Region 10 Conference (TENCON),India

ACADEMIC HONORS:

1. Dean's List Award in Level-2, Term- 1 &2 for having a GPA over 3.75

SKILLS:

- ***Language and Plateform:*** Python, C, R, Assembly
- ***Software:*** MATLAB, Proteus, Pspice, CADENCE, AutoCAD
- ***Software Library:*** Keras
- ***Hardware Skills:*** Arduino Board, RaspberryPi
- ***Database:*** SQL

RELEVANT COURSEWORK:

Digital Signal Processing I # Digital Signal Processing II # Random Signals and Processes #Continuous Signals and Linear Systems # Linear Algebra # Probability & Statistics # Computer Programming

WORK EXPERIENCE:

Jan 20 - Present Lecturer, Dept of EEE, Daffodil International University,Dhaka
Sep 19 - Dec 19 Graduate Trainee (Data Science & AI)
FUJITSU Research Institute, Tokyo, Japan

- Organized and funded by Hi-Tech Park Authority, ICT Ministry of Bangladesh
- Awarded as one of the top 5 trainees among 50 participants

SELECTED PROJECTS:

- **On the Cramer-Rao Bound for Weighted Centroid Based Localisation For Wireless Video Capsule Endoscope**
  - ➢ Lognormal Shadowing Model is used to model the path loss statistically
  - ➢ CRLB is calculated to provide a benchmark to evaluate the performance of any unbiased estimator
- **Automatic Railway Track Changing Model with Centralised Position Monitoring System**
  - ➢ Made an automated exchangeable railway track at junction crossing with the help of ARDUINO and PCB board.
  - ➢ A centralized monitoring system was developed to track down the position of the train.
- **Design of a 32 bit simplified version of a Microprocessor without Interlocked Pipeline Stages (MIPS) processor using CADENCE**
- **Design of an 8 bit carry shift adder using CADENCE Virtuoso.**

NON-ACADEMIC COURSES:

- **SQL for Data Science** Authorized by University of California, Davis offered through Coursera- (Grade 97.21%)
- **Programming for Everybody** (Getting Started with Python) Authorized by University of Michigan offered through Coursera- (Grade 95.78%)
- Python and Data Science Organized by Satyen Bose Science Club, BUET.
- Project-Based Microcontroller Course Organized by eeeTechBD.