

Software engineer experienced in Machine Learning, Cloud Computing, and Web & Mobile application development. Leading a team of engineers to drive new business opportunities and improve the Quality of Life of our end customers.

EXPERIENCE

- **Therap (BD) Ltd.** Dhaka, Bangladesh
Team Lead, Machine Learning *Jul 2019 - Present*

Therap (BD) Ltd. is a wholly-owned subsidiary of **Therap Services LLC., USA**. Therap is a **HIPAA compliant**, web and mobile application suite providing comprehensive solutions to organizations supporting people with **Intellectual and Developmental Disabilities (IDD)**.

 - **Protected Health Information (PHI) in Video:**
 - * Detect persons in video using the Detectron2 PyTorch object detection model.
 - * Identify, annotate, and track the faces of IDD individuals using OpenCV and the InsightFace project.
 - * Dynamically blur individuals for whom the staff watching does not have access.
 - * Initiate the adoption of HIPAA-secure, unobtrusive group home monitoring using CCTV cameras.
 - **Customer Engagement:**
 - * Train a binary classification LSTM model in TensorFlow to predict the likelihood of customers leaving Therap.
 - * Identify similarities and differences between customers by clustering them using the K-Means algorithm.
 - * Implement a feature recommender system using the Matrix Factorization collaborative filtering technique.
 - * Enable Marketing and Customer Support teams to engage with customers more effectively.
 - **Pulse Oximetry:**
 - * Build a Progressive Web App in React, GraphQL, and AWS Amplify to track SpO2 and heart-rate readings.
 - * Send real-time SMS and Email alert notifications using AWS Lambda, SNS and SES.
 - * Significantly improve caregivers' ability to monitor IDD individuals for COVID-19.
 - **Sleep Analysis:**
 - * Implement comprehensive sleep profiles of IDD individuals using sensor readings from IoT sleep mats.
 - * Plot hypnograms, bed in/out statistics, heart and respiration rate diagrams in Plotly.
 - * Inform caregivers of the quality of sleep of IDD individuals.
- **Therap (BD) Ltd.** Dhaka, Bangladesh
Full Stack Software Engineer, System Architecture *Oct 2016 - Dec 2019*
 - **Model:**
 - * Modelled complex Entity-Relationships in Oracle RDBMS.
 - * Wrote highly optimized queries in PL/SQL to store, retrieve, and process large amounts of relational data.
 - **View:**
 - * Generated dynamic HTML content using the JSP template engine.
 - * Implemented event-driven, asynchronous frontend components and plugins using JavaScript and jQuery.
 - * Utilized the Bootstrap CSS library to style the application UI.
 - **Controller:**
 - * Implemented core application features and modules in Java, Spring MVC and Hibernate ORM.
 - * Exposed REST endpoints for core system resources and functions.
 - * Consumed and built services on top of third-party REST APIs.
 - * Wrote unit and integration tests.

EDUCATION

- **BRAC University** Dhaka, Bangladesh
Bachelor of Science in Computer Science Jan 2012 - Aug 2016
 - **CGPA:** Final Year: 3.89/4.00; Overall: 3.75/4.00.
 - **High Distinction:** Graduated with High Distinction.
 - **Merit-Based Scholarship:** Awarded Merit-Based Scholarship valued at CAD 12,000.
 - **Teaching Assistant:** Worked part-time as a TA for Data Structures and Discrete Mathematics.
- **Machine Learning Nanodegree** Dhaka, Bangladesh
Udacity Nov 2019 - Jan 2020
 - **Project:** Trained a Deep Learning model to detect Activities of Daily Living using accelerometer and gyroscope sensor data. More details [here](#).

AWARDS AND HONOURS

- **President's Volunteer Service Award** Washington D.C., USA
President's Council on Service and Civic Participation Aug 2008
 - **Recognition:** Awarded President's Volunteer Service Award from the President's Council on Service and Civic Participation for outstanding service to community and country.
- **YES Leadership Summit** Colorado, USA
Sister Cities International Mar 2008
 - **Recognition:** Successfully completed this summit consisting of challenging and interactive activities designed to improve leadership skills. Applied those skills in a variety of physically and emotionally demanding situations.
- **Youth Exchange and Study (YES) Program** Seattle, USA
Aspect Foundation Aug 2007 - Sep 2008
 - **Recognition:** One of twenty students from Bangladesh to successfully complete the US Department of State funded YES Program. A humbling experience that prides itself in leadership, cultural values, and acceptance.
- **International School Cricket Premier League** Lucknow, India
International Cricket Council (ICC) Jan 2011
 - **Recognition:** Represented Bangladesh as a cricketer in the first ever International School Cricket Premier League organized by City Montessori School & Degree College and sponsored by the ICC.

REFERENCES

- **Warren S. Gifford, Ph.D.**
President Emeritus, Therap Services LLC.
 - **Email:** warrengifford@gmail.com
 - **Mobile:** +1 732-673-1475
- **David L. Turock, Ph.D.**
Director, Biometric Research Laboratory, Therap Services LLC.
 - **Email:** david.turock@therapservices.net
 - **Mobile:** +1 954-226-9333