Md Rayed Bin Wahed

https://rayedbinwahed.netlify.app/

rayed.bin.wahed@g.bracu.ac.bd

(+880) 1774-882517

Software engineer experienced in Web & Mobile application development and in Machine Learning. Leading a team of engineers to deliver innovative products and improve the Quality of Life of our end customers.

EXPERIENCE

- **Therap (BD) Ltd.** — Dhaka, Bangladesh
  Team Lead, Machine Learning — *Oct 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 designed to provide comprehensive solutions for the planning, documentation, reporting, and billing needs of organizations supporting people with Intellectual and Developmental Disabilities (IDD).

  - **Pulse Oximetry Tracking**:
    * Build a Progressive Web App using React, GraphQL, and AWS Amplify to track SpO2 and heart-rate of IDD individuals as an early detection mechanism of COVID-19.
    * Send real-time SMS and Email alerts to caregivers if readings reach dangerous levels.
  - **Face Recognition**:
    * Train a Deep Learning model to recognize faces in videos.
    * Blur faces of individuals for whom the viewer does not have access (**PHI** requirement).
    * The model has an accuracy of 98%.
  - **Customer Retention**:
    * Train a binary classification model to predict the likelihood of customers leaving Therap.
    * Use K-Means clustering algorithm to group customers and extract insight.
    * Implement a feature recommender system to allow greater discovery of services.
  - **Fall Detection**:
    * Train an LSTM model to detect accidental falls from time-series gyroscope and accelerometer smartwatch data.
    * Paired with a real-time notification system, caregivers will be able to respond to injurious events 2x faster.
  - **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.
    * Inform caregivers of the quality of sleep of patients.
  - **Cloud Computing**:
    * Build robust, scalable Machine Learning pipelines in the cloud.
    * Work with core AWS services such as SageMaker, Lambda, S3, EC2, DynamboDB, IAM, etc.
    * Build serverless workflows, microservices, and implement/consume REST and GraphQL APIs.
  - **Related Technologies**: Python, TensorFlow 2.0, Scikit-Learn, Numpy, Pandas, Plotly, Jupyter Notebooks, Amazon Web Services (AWS), React, GraphQL, Apollo Client, Docker.

- **Therap (BD) Ltd.** — Dhaka, Bangladesh
  Full Stack Software Engineer — *Oct 2016 - Sep 2019*
  - **Frontend**:
    * Implemented interactive frontend components using HTML, CSS, JavaScript and the jQuery library.
    * Optimized client-side code and increased site repsonsiveness by 20%.
  - **Backend**:
    * Collaborated with different teams and end users to understand product requirements and draw up design specifications.
    * Implemented core application features using Java, Spring MVC and Hibernate ORM.
    * Wrote unit and integration tests.
  - **Databases**:

- ∗ Worked with Relational Database Management Systems such as Oracle Database and MySQL.
- ∗ Worked with NoSQL databases such as DynamoDB and Cloud Firestore.
- ∗ Wrote highly optimized queries to strore, retrieve large amounts of data.
  - ○ **Deployment**:
    - ∗ Deployed applications in a variety of servers and hosting environments such as Oracle Weblogic Server, Node.js, and Netlify.
    - ∗ Leveraged build and dependency management tools such as Gradle, Maven, npm, and Yarn in all projects.

- **We Are X** Dhaka, Bangladesh
  Machine Learning Consultant (Contractual, Remote) *Jan 2019 - Mar 2019*

  Online social-media customer service platform for large enterprises.

  - ○ **Task**: Implemented a text classification model to classify customer queries written in Bengali and English into 5 categories.
  - ○ **Outcome**: Improved customer service representative productivity by 3x.

Education

- **BRAC University** Dhaka, Bangladesh
  Bachelor of Science in Computer Science *Jan 2012 - Aug 2016*
  - ○ **High Distinction**: Awarded High Distinction for a Cumulative Grade Point Average (CGPA) of 3.75/4.00.
  - ○ **Merit Based Scholarship**: Awarded Merit Based Scholarship for the duration of the entire program.
  - ○ **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**: Implemented a Human Activity Recognition (HAR) LSTM Deep Learning model using the WISDM Smartphone and Smartwatch Activity and Biometrics Dataset to classify 5 Activities of Daily Living.
  - ○ **Outcome**: Obtained an accuracy of 90% using only the smartwatch data.

Awards and Honors

- **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 the 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 *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 International Cricket Council (ICC).

References

- **Warren S. Gifford, Ph.D.**

  Co-author, Driving Tomorrow: Our Roadmap to Sustainable Transportation, Infrastructure and Cities

  - **Positions**:
    - President Emeritus, Therap Services LLC.
    - Former Executive Director in Applied Research, Bell Communications Research
    - Former Head of Digital Network Planning Department, Bell Laboratories
    - Former Special Rapporteur for Digital Network Interfaces in Study Group XVIII in CCITT
  - **Email**: warrensgifford@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