

## PERSONAL INFORMATION

**NAME:** Afrida Rahman

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## EDUCATION

2016-2021

### Bachelor of Science (B.Sc.) in Computer Science and Engineering

Rajshahi University of Engineering and Technology, Rajshahi, Bangladesh

- Undergraduate Thesis Title: "iML-LysPTM: Identification of Multiple Lysine PTM Sites with Different Feature Extraction Methods and Handling Data Imbalancement".
- Achieved 80% or higher marks in the following courses: 'Vector Analysis and Linear Algebra', 'Analytical Programming', 'Data Mining', 'Network Security' and 'Project/Thesis I and Project/Thesis II'.

## WORK EXPERIENCE

February 2021 - Present  
( 10 months )

### Jr. AI Developer

MyMedicalHUB ([Link](#))

Headquarter: 13220 McCormick Drive, Tampa, FL 33626, US

- Working on an AI Coach project where virtual measurements and movements capturing of human musculoskeletal assessment have been delivered through telemedicine interface.
- Worked on real time audio detection for better prediction for voice command sub-project in the AI Learned Therapy project. In this sub-project, audio data analysis with appropriate feature construction, deep learning model with deployment are the key elements.

August 2019 - Present  
( 2 years 4 months )

### Researcher ([Google Scholar](#) , [ORCID](#) , h-index: 2)

Machine Learning Research Lab ([Link](#))

- Analyzing and exploring the relevant fields of Computational Biology.

## PUBLICATIONS

### Conference Paper

1. **Rahman, Afrida**, Sabit Ahmed, Julia Rahman, and Md. Al Mehedi Hasan. "Prediction of Formylation Sites by Incorporating Sequence Coupling into General PseAAC." In 2020 IEEE Region 10 Symposium (TENSYP), pp. 921-924. IEEE, 2020. [DOI](#)

### Journal Articles

1. **Rahman, Afrida**, Sabit Ahmed, Md. Al Mehedi Hasan, Shamim Ahmad, and Abdollah Dehzangi. "Accurately Predicting Nitrosylated Tyrosine Sites Using probabilistic sequence information." (**Under Revision in Gene**) (**Impact Factor 3.688**)
2. Ahmed, Sabit, **Afrida Rahman**, Md. Al Mehedi Hasan, Shamim Ahmad, and Shovan, S. M. (2021). "Computational identification of multiple lysine PTM sites by analyzing the instance hardness and feature importance." **Scientific reports**, 11(1), 18882. [DOI](#) (**Impact Factor 5.133**) ([Source Code](#))
3. Ahmed, Sabit, **Afrida Rahman**, Md. Al Mehedi Hasan, Md. Khaled Ben Islam, Julia Rahman, and Shamim Ahmad. "predPhogly-Site: Predicting Phosphoglycerylation Sites by Incorporating Probabilistic Sequence-Coupling Information into PseAAC and Addressing Data Imbalance." Edited by Ozlem Keskin. **PLOS ONE** 16, no. 4 (April 1, 2021): e0249396. [DOI](#) (**Impact Factor 3.24**) ([Source Code](#))
4. Ahmed, Sabit, **Afrida Rahman**, Md. Al Mehedi Hasan, Md. Khaled Ben Islam, Julia Rahman, and Shamim Ahmad, "predML-Site: Predicting Multiple Lysine PTM Sites with Optimal Feature Representation and Data Imbalance Minimization," in **IEEE/ACM Transactions on Computational Biology and Bioinformatics**, [DOI](#) (**Impact Factor 3.015**)

## PROJECTS

(August 2021 - Present)

### 1. EMMA - AI Coach - (Android version) ([Github](#))

- Developing AI driven musculoskeletal solutions with computer vision, natural language processing.
- Developing software for providing virtual therapy to the patients.
- Deploying various pose detection and body-part segmentation models in android.

(April 2021)

### 2. Speech Recognition Model ([Github](#))

- Real time speech recognition & prediction system which can take commands from the user and predict that speech or words and execute instructions according to it.

(September 2020)

### 3. Web Scraping API ([Github](#))

- **Review Scraper:** It is an application where customer reviews of a website (i.e. Flipkart) are scrapped using Flask and the gained customer reviews are stored automatically in MongoDB and lastly, the deployment has been completed using Heroku server.
- **Image Scraper:** It is another Flask application by which images can be scrapped from different websites based on user requirement.

(August 2019 – Present)

### 4. Post-Translational Modifications (Research Project)s ([ResearchGate](#))

- Developed **3** single label predictors, such as Formyl\_Pred, predPhogly-Site, and PredNitro which correspond to formylation, phosphoglycerylation, and nitrotyrosine sites prediction individually.
- Constructed **2** multi-label predictors predML-Site, and iMul-kSite for predicting acetylation, crotonylation, methylation, succinylation, and glutarylation sites simultaneously.

#### Web-servers:

- predPhogly-Site: <http://103.99.176.239/predPhogly-Site>
- PredNitro: <http://103.99.176.239/PredNitro>
- predML-Site: <http://103.99.176.239/predML-Site>
- iMul-kSite: <http://103.99.176.239/iMul-kSite>

## PERSONAL SKILLS

Mother tongue(s)

Bangla

Other tongue(s)

English (IELTS Band Score 6.5 by the IDP [Valid until 11 December, 2023])

Data science & machine learning

- Data analysis, Protein sequence analysis, Feature analysis, Basic statistics, Classification techniques.
- Linear regression, Deep learning, Hyper parameter tuning, Transfer learning, Model development.

Libraries and Frameworks

- Tensorflow, Scikit-Learn, OpenCV, Numpy, Pandas, Scipy.
- Django, Flask, Android Studio.

Visualization

- Dataframe, Matplotlib, Seaborn, Plotly.

Programming language

- Python, C++, Matlab, Kotlin.

Database

- SQLite, NoSQL(MongoDB), PostgreSQL, MySQL.

Deployment

- Docker, Docker-compose, Kubernetes.

Others

- Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Git, Linux command lines.

## MEMBERSHIPS

December 2019 - Present  
( 2 years )

### Student Member

IEEE

- Communicating with the professional world and building networks for future goals.

## CERTIFICATIONS

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### IEEE Region 10 Symposium 2020

Certificate of appreciation for a successful presentation on "Prediction of Formylation Sites by Incorporating Sequence Coupling into General PseAAC"

### Issued by University of Michigan (Coursera Platform)

- Programming for Everybody (Getting Started with Python)
- Python Data Structures
- Using Databases with Python
- Using Python to Access Web Data

## VOLUNTEER EXPERIENCE

March 2018 - February 2021  
( 3 years )

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### General Member

RUET Innovation Society

- Collecting innovative ideas and maintaining relationships with creative people.

## REFERENCES

4<sup>th</sup> Year Thesis Supervisor

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### Dr. Md AI Mehedi Hasan

Postdoctoral Researcher, University of Aizu, Japan

Professor, Department of Computer Science and Engineering,

Rajshahi University of Engineering and Technology, Rajshahi-6204, Bangladesh.

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4<sup>th</sup> Year Thesis Supervisor

### Julia Rahman

Institute for Integrated and Intelligent Systems, Griffith University, Brisbane, Australia

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Collaborator

### Dr. Abdollah Dehzangi

Assistant Professor, Department of Computer Science,

Center for Computational and Integrative Biology (CCIB),

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