Curriculum Vitae

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”.

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 (**TENSYMP**), 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." DOI **(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) (Demo)

- 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.

Visualisation
- 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

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)

General Member

RUET Innovation Society

- Collecting innovative ideas and maintaining relationships with creative people.

REFERENCES

4th Year Thesis Supervisor

Dr. Md Al 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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4th Year Thesis Supervisor

Julia Rahman
Institute for Integrated and Intelligent Systems, Griffith University, Brisbane, Australia
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Collaborator

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