AFRIDA RAHMAN

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Summary

Being a final year student with a background in computer science, has a great interest in artificial intelligence and has worked as a research candidate for the Machine Learning Research Group. Experimentalized on different types of protein Post-Translational Modification (PTM) sites using several feature selection and extraction methods along with Sequence Analysis and Machine Learning Algorithms. Completed some web development projects using HTML, CSS, JavaScript, PHP, SQL, Python, Django. Recently started Machine Learning and Deep Learning with Deployment course provided by iNeuron, an Indian organization that builds innovative and affordable AI solutions.

Education

	Institute	Result	Year
Computer Science and Engineering (Bsc.)	Rajshahi University of Engineering and Technology	CGPA-3.33 (present)	2015 – 2019
Higher Secondary School Certificate	Rajshahi College	GPA-5.00	2013-2015
Secondary School Certificate	Govt. P.N Girls' High School	GPA-5.00	2013

Work Experience

iNeuron – Trainee (June 2020 – Present)

- Acquiring the basic knowledge of OOP concepts along with python core, exception handling, database programming, data analysis and visualization, rest API, SQL, statistics, exploratory data analysis, machine learning algorithms with end to end development.

Banglamedic– Trainee (October 2020 – Present)

- Learning the usage & implementation of Docker, Containerization, Kubernetes, Devops.

Machine Learning Research Group–Research Candidate (August 2019 – Present)

- Analizing and exploring the relevant fields of Computational proteomics.

IEEE – Student Member (December 2019 – Present)

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

Innovation Society of RUET (ISR) – General Member (August 2018 – Present)

- Collecting innovative ideas and maintaining relationship with creative people.

Bangladesh Betar – Lead singer (2009 – 2014)

- Maintaing a leading role in different cultural activities.

Projects

1. **Dockerized Crud API**: (October 2020)
   - A simple Flask crud api by which data can be inserted, deleted, updated based on sending json response and stored data in MongoDB (same procedure is applied on PostgreSQL database) and then containerized the whole application for deployment procedure.

   Tools: Docker, Flask, MongoDB, Postman, PostgreSQL

2. **Web Scraping API**: (September 2020)
   - **Review Scraper**: It is an application where customer reviews of a website (i.e. Flipcart) 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 website based on user requirement.

   Tools: Flask, HTML, CSS, Python, MongoDB.

3. **Hospital management system**: (March 2019 – June 2019)
   - It is an integrated information system for managing different aspects of a hospital's operations such as medical, financial, administrative .It will include all records of general stuff, doctor, patient, operations in database. It will also provide opportunities to get quick response & appointment section.

   Tools: HTML, CSS, Core PHP, Laravel, MySQL, Mailtrap.io

4. **Blogging Website**:

a) Agriculture Disease Management System: (March 2018 – August 2018)

- A website provides the users to choose any photo of plant's disease and if the data of that disease is stored in database , system will show that particular disease management ways with the symptoms, pre and post actions of disease.

Tools: HTML, CSS, Core PHP, MySQL

b) Historical place based website: (March 2017 – December 2017)

- A simple website by which people can gather knowledge & history of that particular places after registration. It also provides the users a comment section.

Tools: HTML, CSS, Core PHP, MySQL

Research Projects :

1. **Post Translational Modification**: (January 2020 - Present)
   - The goal of this project is to identify post-translational modifications in proteins.

Several post-translational modifications are experimented.

- Single predicted sites: Formylation, Phosphoglycerylation sites. (Individually)
- Multiple predicted sites: Acetylation, Gluterylation, Malonylation, Succinylation, Crotonylation. (Simultanously)
- Two web-servers are deployed to predict these sites:
  a) http://103.99.176.239/predPhogly-Site
  b) http://103.99.176.239/predML-Site

Publications

International Conferences:

Prediction of Formylation Sites by Incorporating Sequence Coupling into General PseAAC. (Published) 2020

Authors: Afrida Rahman, Sabit Ahmed, Julia Rahman and Md. Al Mehedi Hasan.
Conference Name: IEEE Region 10 Symposium (TENSYMP), 2020.
Tools: Python, Matlab, Scikit-learn.
DOI: http://dx.doi.org/10.1109/TENSYMP50017.2020.9230745

International Journals:

Predicting phosphoglycerylation sites with the incorporation of sequence-coupling information into Chou's general PseAAC (Under Revision) 2020

Authors: Sabit Ahmed, Afrida Rahman, Md. Al Mehedi Hasan, Md Khaled Ben Islam Julia Rahman and Shamim Ahmed.
Journal Name: PLOS ONE
Tools: Python, Scikit-learn, Django, HTML, and CSS.
Web-server: http://103.99.176.239/predPhogly-Site

Predicting Multiple Lysine PTM Sites with Optimal Feature Representation and Data Imbalance Minimization. (Submitted) 2020

Authors: Sabit Ahmed, Afrida Rahman, Md. Al Mehedi Hasan, Julia Rahman, Md Khaled Ben Islam and Shamim Ahmed.
Journal Name: IEEE/ACM Transactions on Computational Biology and Bioinformatics.
Tools: Python, Matlab, Scikit-learn, Django, HTML, and CSS.
Web-server: http://103.99.176.239/predML-Site

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"

Coursera -

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

Skills

Data science and machine learning based:

- Data analysis, Protein sequence analysis, Feature analysis, Basic statistics.
- Linear regression, Classification techniques, Parameter tuning, Model development.

Visualization based:

- Dataframe, Matplotlib, Numpy, Seaborn, Plotly.

Programming language based:

- Python, C++, C, HTML, CSS, Matlab.

Database based:

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

Framework based:

- Django, Flask, Vue.js.

Deployment based:

- Docker, Docker-compose, Kubernetes.

Others:

- Microsoft Word, Excel, Powerpoint, git.