Curriculum Vitae

NAME: **SABIT AHMED**

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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

- Earned 160 credits.
- 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: Artificial Intelligence, ‘Data Mining’, ‘Neural Networks and Fuzzy Systems’, ‘Network Security’ and ‘Project/Thesis I and Project/Thesis II’.

RESEARCH EXPERIENCE

August 2019 - Present
(3 years)

Researcher (H-Index: 3) Google Scholar ORCID

Machine Learning Research Group

Rajshahi University of Engineering and Technology, Rajshahi, Bangladesh

Website: https://www.researchgate.net/lab/Machine-Learning-Research-Group-Md-Al-Mehedi-Hasan

- Pursuing research on Data Mining, Machine Learning, Bioinformatics, Natural Language Processing and Computer Vision.

June 2022 - Present
(Less than 6 months)

Reviewer

Briefings in Bioinformatics (IF. 11.62)

- Review state-of-art studies in Bioinformatics.

WORK EXPERIENCE

February 2021 - Present
(1 year 6 months)

AI Engineer

MyMedicalHUB

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

Website: http://www.MyMedicalHUB.com

- Working with the R&D team on automated musculoskeletal health solutions.
- Developed a fully-functional mobile application, AI Coach (Virtual Therapist) from scratch to aid patients to perform and track exercise movements without any human interaction. I have used Computer Vision techniques with necessary voice commands to guide a patient while doing real-time exercises. This application is the world’s first-ever built AI-based musculoskeletal health management application and it is expected to be used by approximately 1 million potential patients across the USA.

PUBLICATIONS

Journal Articles

1. **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:10.1371/journal.pone.0249396. (**Impact Factor 3.24**) Source-Code

2. **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: 10.1109/TCBB.2021.3114349. (**Impact Factor 3.015**)

3. **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. https://doi.org/10.1038/s41598-021-98458-y. (**Impact Factor 5.133**) Source-Code
4. Rahman, Afrida**, Sabit Ahmed**, Md Al Mehedi Hasan, Shamim Ahmad, and Abdollah Dehzangi. "Accurately Predicting Nitrosylated Tyrosine Sites Using probabilistic sequence information." Gene - Elsevier (March 28, 2022), doi: https://doi.org/10.1016/j.gene.2022.146445, Source-Code

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.

PROJECTS

(August 2021 – Present)

1. **AI COACH (Android Demo and iPad Demo, iPhone Demo)**

- It is a virtual therapist which can guide patients for the correct movements of an exercise.
- Designed for mobile devices (Android and iOS).
- Developing AI driven musculoskeletal solutions with computer vision, natural language processing
- Deploying custom-trained and converted models, face and pose detection models with react-native framework.

(August 2019 – Present)

2. **Forecasting Post-Translational Modifications of Proteins (Research Project)** ResearchGate

- Developed **3** single label predictors, such as Formyl_Pred, predPhogly-Site, and PredNitro which correspond to 3 types of protein modifications (i.e. formylation, phosphoglycerylation, and nitrotyrosine sites) prediction individually.
- Constructed **2** multi-label predictors predML-Site, and iMul-kSite for predicting 5 types of protein modifications, such as acetylation, crotonylation, methylation, succinylation, and glutarylation sites simultaneously.
- Currently working on NLP models (i.e. Word2Vec, Glove, BERT, ProteinBERT etc.) to perform sequence analysis and protein modification identification. Our most recently developed model name is predGlutBERT where we have utilized pretrained BERT model to predict glutarylation modification.

(May 2022 – Present)

3. **Identifying RNA Modifications with Deep Learning (Research Project)**
   - DeepR5hmc (Deep Learning in RNA 5-hydroxymethylcytosine prediction)

PERSONAL SKILLS

Language

Bangla (Native)

English (IELTS Band Score **7.0** by the IDP **[Valid until 19 November, 2023])**

Hard skills

Language and Frameworks

- Python, Kotlin, Swift, MATLAB, JavaScript, React Native, Vue, C++, PHP
- Django, Flask, Docker, SQLite, SQL, NoSQL(MongoDB), Android Studio, XCode, Git

Data Analysis and Machine Learning

- Data Analysis, Feature Engineering, Model Development, Machine Learning, Basic statistics, Web Scraping, Image Processing
- Pandas, Numpy, Seaborn, Matplotlib, Plotly & Cufflinks
- TensorFlow. PyTorch, Keras, PyTorch, Scikit-learn, Sci-py, PyCharm, Spyder, Jupyter Notebook
- Computer Vision, Pose and Face Detection, Body Segmentation, Gesture Recognition
- Bioinformatics, Computational Proteomics, Multi-Label Metrics
- Natural Language Processing in Protein Sequence Analysis

Soft Skills

- Problem solving, Self-motivation, Ability to work under pressure, Multi-tasking
- Communication, Teamwork, Leadership

MEMBERSHIP AND CERTIFICATIONS

November 2021 - Present

Full Member
Sigma Xi, The Scientific Research Honor Society

Certifications

Issued by University of Michigan (Coursera Platform)

- Programming for Everybody (Getting Started with Python)
- Python Data Structures
- Building Web Applications in PHP

Issued by IEEE

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

REFEREES

4th Year Thesis Supervisor

Dr. Md Al Mehedi Hasan
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Department of Computer Science and Engineering
Rajshahi University of Engineering and Technology
Rajshahi-6204, Bangladesh.
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Research Supervisor and Collaborator

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