YAKIN RUBAIYAT

Dhaka ⋄ Bangladesh

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EDUCATION

Patuakhali Science and Technology University   *Jan 2016 - Dec 2019*
B.S. in Computer Science & Engineering
Year: 2016-2019
Medium of Instruction: English
Total Credits: 165
CGPA: 3.121
Last three semester GPA: 3.27, 3.21, 3.25

TECHNICAL STRENGTHS

Expertise	Classification, Regression, Clustering, Feature engineering; Convolutional Neural Network, Data Augmentation; Time Series Analysis, Dimension Reduction (e.g. PCA);
Programming Languages	Python, C++11, Java
Python Package	Numpy, Pandas, Seaborn, Scikit-Learn, Plot.ly
Framework	Keras, fast.ai, TensorFlow, Pytorch, React, Flask, Django
Miscellaneous Tools	Vim, Git, LaTeX
Languages	Bangla, English

EXPERIENCES

Enosis Solutions   Dec 2019 - Present
Senior Software Engineer   *Bangladesh*

- Develop data-driven medical software using React and Django frameworks

- Contribute to software design and architecture

- Collaborate with cross-functional teams to ensure project success

Ankur Undergrad Research Scholarship   Mar 2017 - Present
Research Fellow   *Bangladesh*

- Pnumonia Dataset [Dataset]

  A dataset of over 140 patient records has been collected from local diagnostic centers and validated by 3 different doctors to test a pneumonia detection model.

- Web-based Medical Software for Pneumonia Detection [Github]

  A web-based application has been developed that allows users to upload mobile-captured X-ray images and receive a prediction of pneumonia for the uploaded image.

- Modified Residual Attention Network Pneumonia Detection [Github]

  Different models for pneumonia detection have been analyzed and a custom model based on Residual Attention Network has been created. Our model showed better performance compared to other existing models.

- Early Diabetes Prediction. [Github]

  Various models and techniques for early diabetes detection have been studied. The results show that data recovery with MLP is more effective than K-means-based noise reduction with different types of classifiers.

PUBLICATION

- Hasan, M., Saxena, D., Rubaiat, Y., Ahamed, S., & Guha, S. (2022). Design recommendations for a smartphone-based point-of-care tool: Analyzing context and implications for use in rural bangladesh. In *International journal of human–computer interaction.*

- Sakib, S. N., Rubaiat, S. Y., Masud, R., Sarker, M., & Bepery, C. (2022). Efficacy of transfer learning models in pneumonia detection with scarce local healthcare data. In *The 12th international conference on electrical and computer engineering (icece)* (p. 1-4).

- Sakib, S. N., Masud, R., Rubaiat, S. Y., Bepery, C., Sarker, M., & Hasan, M. K. (2021). Pneumonia detection using deep transfer learning in gender specific chest x-ray images. In *2021 international conference on electronics, communications and information technology (icecit)* (p. 1-4). doi: 10.1109/ICECIT54077.2021.9641281

- Rubaiat, S. Y., Rahman, M. M., & Hasan, M. K. (2018). Important feature selection accuracy comparisons of different machine learning models for early diabetes detection. In *2018 international conference on innovation in engineering and technology (iciet)* (p. 1-6). doi: 10.1109/CIET.2018.8660831

COMPETITION

- Microsoft Malware Detection Challenge (Top 10 percent), Kaggle   *Mar 2019*

- Catch me if you can (User identity detection) (Top 5 percent), Kaggle   *Mar 2019*

- RSNA Pneumonia Detection Challenge (Top 13 percent), Kaggle   *Feb 2019*

- ACM ICPC Dhaka Regional (Onsite) ACM uHunt Codeforce   *2016, 2017, 2018*

PROJECTS

- Bangladesh Rape Case Survey [Google Sheet]   *Jan 2022 - May 2022*

  A total of 116 men and women participated in a survey regarding their opinions on the Bangladesh rape case.

- Weather Time Series Data Analysis and Prediction [Kaggle]   *Jan 2020 - Mar 2020*

  Bangladesh weather data from the past 50 years has been analyzed and a time series model has been created that can predict future temperatures, rain, and runoff.

- Newspaper Data Analysis [Kaggle]   *Jan 2020 - Mar 2020*

  Newspaper articles have been analyzed to understand the situation of road accidents and rape cases on a country-wide scale.

- Different Type of Fruit Classification (Python)   *Sep 2018*

  A software has been developed that can detect different types of fruit in real time and sort them into different categories or boxes.

- 3 Lead ECG. (Java)   *Dec 2017*

  During our research summer camp, we developed a 3 Lead ECG using Java. The ECG is capable of measuring a person's electrocardiogram and providing useful information about their heart health. This project was a great learning experience and allowed us to apply our knowledge of programming and engineering to create a functional medical device.

- Online MCQ Exam System (PHP) [Github]   *Dec 2017*

  An online multiple-choice exam system has been created using PHP.

PROGRAMMING CAMP

- National Research Summer Camp (Dhaka University) *Jul 2018*
- Nepal National Programming Camp (Instructor) *Jan 2018*
- BACS-BUBT National Programming Camp (Beginner, Intermediate) *2016, 2017*

RELEVANT COURSEWORK

- **Computer Science**: Programming Language, Data Structure and Algorithms, Algorithm Engineering, Software Engineering, Database Systems, Numerical Methods, Discrete Mathematics, Artificial Intelligence, Machine Learning, Computer Graphics and Image Processing

- **Signal Communication**: Basic Communication Engineering, Signal and Linear Systems, Optical Fiber Communication, Network Routing and Switching, Cellular Mobile and Satellite Communication and related lab courses

- **Mathematics**: Differential and Integral Calculus, Co-ordinate Geometry and Linear Algebra, Statistics, Vector Analysis and Complex Variables, Ordinary and Partial Differential Equations

- **Electrical & Electronics**: Basic Electrical Engineering, Electrical Technology, Digital Logic Design, Microprocessor and Interfacing, VLSI and related lab courses

SELECTED ONLINE COURSES

- **Convolutional Neural Networks** by Stanford University (MOOC) *Jul 2019*
- **mlcourse.ai** by Open Data Science *Apr 2019*
- **Deep learning specialization** by deeplearning.ai *Nov 2018*
- **Machine Learning** by Stanford University (MOOC) *May 2018*

ORGANIZATION

- **Vice President, CSE Club** *Jan 2019 - Dec 2019*

  Successful engagement events, such as the IT Carnival 2018, 2019 and the Independence Day Programming Camp 2019, as well as inter-university programming contests, have been organized.