



Masum Billal

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Education

BSc, CSE, Department of Computer Science and Engineering, University of Dhaka, Bangladesh.

Work Experience

2019 **Senior Data Scientist, August 4 to present, Shohoz, Dhaka.**

At Shohoz, I am responsible for building a data pipeline in Azure, user profiling and clustering, data mining on a particular service, fraud analysis and exploratory data analysis e.g. using PySpark. I have also worked on AWS based data pipeline using Kafka as message queue service.

2019 **Machine learning engineer and senior programmer, October 2018 to May 2019, Auleek, Dhaka.**

During my time at Auleek, I used deep learning in tensorflow to extract features from floor-plan images, worked on mesh generation and manipulation e.g. union/intersection, object placement in a given floorplan, etc.

2017 **Software engineer, R&D, March, 2017 to September, 2018, Reve systems, Dhaka.**

At Reve, I worked on variety of projects. I was part of a three man team responsible for a govt. project which can be found here: <http://evet.gov.bd/>. I also worked on a project called *IP log* where my job was to receive and process all incoming and outgoing packets from a network interface. Multithreading was necessary to prevent packet loss.

2016 **Data analyst and software developer, Remote Job, Threat Equation PTE Ltd., Singapore.**

My role was to predict vulnerability from server logs after training them on previously fed data. Then I had to present the predictions and related information in the dashboard for visualization.

Pet Projects

Seeding in **Unsupervised learning, Research**, Python, I tried to improve the **k-means** clustering algorithm in this project.

<https://github.com/proafxin/clustering>

Localizer **Object detection, Personal project**, Python, This project is a deep learning based localization application. It can be trained using given images and detect the objects in test images.

<https://github.com/proafxin/Localizer>

Improving collaborative filtering	Machine learning , <i>Research on recommender Systems</i> , C++, Python, In this project, I developed a recommender systems with F-1 score of almost 75%. This was part of my BSc. thesis.
Media recommender	Machine learning based web application , <i>Personal project</i> , Django, This is a web application that provides personalized feed based on user preferences and past history. https://github.com/proafxin/media-recommendation
Online library	Web application , <i>Personal project</i> , Dotnet core, This is a dotnet core MVC based web application for online library.. https://github.com/proafxin/library

Achievements and voluntary experience

- 2013 **Inter-University Programming Contest**, *North South University, Bangladesh*, Rank 9.
- 2012 **Inter-University Programming Contest**, *IUT, Bangladesh*, Rank 13.
- 2013 **ICPC**, *Dhaka Regional, Bangladesh*, Rank 17.
- 2012 **ICPC**, *Dhaka Regional, Bangladesh*, Rank 18.
- 2010 **Medal in math olympiad**, *Bangladesh Mathematical Olympiad*, National, Regional.
- 2009 **Medal in math olympiad**, *Bangladesh Mathematical Olympiad*, Regional.
- 2011 – 2015 **Trainer at math camps**, *Bangladesh Mathematical Olympiad*, National, Extension and IMO math camps.
- 2019 **Mathematical programming**, *Global Rank 132 on Hackerrank mathematics section*.

Publications

- 2019 **Topics in Number Theory: An Olympiad Oriented Approach**, *Masum Billal, Amir Hossein*, Amazon, ISBN-10: 1719920311.
- 2015 **Similarity Aggregation for Collaborative Filtering**, *AIST Conference*, Sheikh Muhammad Sarwar, Masum Billal, Mahmudul Hasan, Dimitry I. Ignatov.
http://link.springer.com/chapter/10.1007/978-3-319-26123-2_23
- 2014 **A Nice Theorem in Multiplicative Functions**, *Eureka, The Cambridge University Mathematical Society*, Issue 63, Masum Billal.
- 2012 **Exponent GCD Lemma**, *Mathematical Reflections*, Issue 6, Masum Billal.
- 2016 **10th Bangladesh Mathematical Olympiad: Selected Problems and Solutions**, *Bangladesh Math Booklet*, 2015.
<https://karushib.wordpress.com/2016/05/29/bangladesh-booklet-of-math-problems-2015/>

Interests and Hobbies

Research	Optimizing algorithms or finding new ones. Studying on topics I am interested in for interesting results. Mathematics, Algorithms, Cryptography, Machine Learning etc.
Programming	Creating and solving problems. Proposed some problems for Hackerrank and some inter university contests.
Mathematics	Finding new results and creating or solving new problems.

Gaming Playing Dota 2, Assassin Creed Origins etc.

Others

- LinkedIn: <https://www.linkedin.com/in/billalmasum93>
- Blog: <https://karushib.wordpress.com/>

References

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