Masum Billal

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Education

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

Recent Work Experience

2020 November– currently working here

Senior Data Scientist, *Ixora Solution*, Dhaka.

August 2019– November, 2020

Senior Data Scientist, *Shohoz*, Dhaka.
- Successfully built data pipelines, analytics and visualization and scalable data storage solution for Corona Tracer Bangladesh, a joint venture by Bangladesh government and Shohoz. Tech stacks: `PySpark, Cassandra, Bokeh, Pandas, Holoviews`, etc. This project is live at `http://tracer-admin.ctbd.corona-dghs.xyz/`
- Built data pipelines in AWS, Azure (`python`) using message queue services such as Service bus/Event Hub/Kafka or machine learning pipeline services.
- Created automated fraud detection pipelines.
- Hands on exploratory data analysis of real user data using tools such as `pandas, PySpark, Scikit-learn, Tensorflow, PyTorch`, etc.
- Developed an automated user profiling system for quest planning.
- Developed automated priority dispatching services.
- Used data mining techniques for provider distribution/trend analysis/recommendation.

Previous Experience

October 2018–May 2019

Machine learning engineer and senior programmer, *Auleek*, Dhaka.

March 2017– September 2018

RnD Software engineer, *Reve systems*, Dhaka.

2016

Software developer, *Remote Job*, Threat Equation PTE Ltd., Singapore.

Pet Projects

NoSQL to SQL

Data engineering, *Open source library*, Python, `https://pypi.org/project/flatten-nosql/`.

Seeding in k-means clustering	**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, A YOLO based localization application. https://github.com/proafxin/Localizer
Improving collaborative filtering	**Machine learning**, *Research on recommender Systems*, C++, Python, In this project, I developed a recommender systems with F-1 score of almost 75%. This was part of my BSc. thesis.
Online library	**Web application**, *Personal project*, Dotnet core, A dotnet core 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

2020	**Integer Sequences: Divisible, Lucas and Lehmer Sequences**, *Masum Billal, Samin Riasat*, To be published in Springer Nature soon.
2018	**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**, *Masum Billal*, Eureka, The Cambridge University Mathematical Society, Issue 63.
2012	**Exponent GCD Lemma**, *Masum Billal*, Mathematical Reflections, Issue 6. 2012
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, Valorant, Assassin Creed games, etc.

Others

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

References

Farhad Alam Bhuiyan, Data Science Lead, Shohoz, Bangladesh. Email: `farhad.alam@shohoz.com`

Mahbub Majumdar, Professor and Chairperson, Department of Computer Science and Engineering, BRAC University. Email: `majumdar@bracu.ac.bd`

Khandaker Amitabh Nobel, Senior Vice President, Technology, Shohoz, Bangladesh.