



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.
- 2019 **Machine learning engineer and senior programmer, October 2018 to May 2019**, Auleek, Dhaka.
- 2017 **Software engineer, R&D, March, 2017 to September, 2018**, Reve systems, Dhaka.
- 2016 **Data analyst and software developer, Remote Job**, Threat Equation PTE Ltd., Singapore.

Projects

- 2019 **Machine learning, data engineering, data analysis**, Shohoz, Python, At Shohoz, I have been working on a data pipeline in Azure, user profiling and clustering, fraud analysis and exploratory data analysis. I have also worked on AWS based data pipeline using Kafka as message queue service..
- 2019 **Deep learning, computer vision, feature extraction, object detection**, Auleek, Python, C++, C#, I used deep learning in tensorflow to extract features from floor-plan images. The challenge was to find a viable solution that can detect elements such as doors, walls, windows etc and I was able to do it using object detection. There was also esh generation for different kind of object shapes, mesh combining such as union or intersection, checking if an object can be placed in an arrangement (for example with rotation) etc.
- 2018 **E-veterinary, web development**, Reve systems, Java, Spring Boot, JPA, I worked on both backend and frontend for this government project. We used Spring boot for faster development, thymeleaf and javascript for front-end communication and JPA for hibernate-like ORM manipulation. Agile development process helped us complete the project within the tight deadline..
Here is the live server <http://evet.gov.bd/login>
- 2017 **IP log, Networking, Multithreading**, Reve systems, C++, My job in this project was to receive and process all incoming and outgoing packets from a network interface. Multithreading was necessary to prevent packet loss..

- 2016 **Machine learning, recommender Systems, improving collaborative filtering**, *Bsc Thesis*, C++, Python, In my thesis, I developed a recommender systems with F-1 score of almost 75%. .
- 2016 **Machine learning, web development, data analysis**, *Threat Equation PTE Ltd*, Python, Django, My role in this project 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.

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

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