

Masum Billal

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EDUCATION

University of Dhaka
CSE

Dhaka, Bangladesh
BSC

Career Summary

- Pursuing career in data science, mostly in machine learning.
- Worked as full stack web developer and software engineer.
- Involved in machine learning since the publication in 2015.
- From mathematical and competitive programming background.

EXPERIENCE

Auleek

Machine learning engineer

Dhaka, Bangladesh
October 2018 - May 2019

○ **Hestia**

- Used deep learning in tensorflow to extract features (door, wall, window etc) from floorplan images.
- RnD on interior design automation, such as structural groups of furnitures and finding the most optimal configuration.
- Implemented mesh generation for different kind of object shapes, mesh combining such as union or intersection, checking if an object can be placed in an arrangement.

Reve Systems

Software Engineer

Dhaka, Bangladesh
March 2017 - September 2018

○ **e-Veterinary Services**

- Worked full-stack from Spring Boot framework to thymeleaf frontend templating, bootstrap and javascript.
- Used JPA for hibernate-like ORM manipulation.
- Followed agile development process for meeting tight deadline.
- Live server of project: <http://evet.gov.bd/login>

○ **IP Log**

- Worked on networking and socket protocols for receiving and processing all incoming and outgoing packets in a network.
- Used multi threading for avoiding packet loss and prevented buffer overflow during packet receiving.

○ **Surveillance**

- Worked on backend of this Struts based project.
- Implemented features such as duplicate number detection, home or office detection etc based on geolocation.
- Did RnD on geolocation, 2G/3G/GSM protocols and distance estimation models from signal strength and related parameters.
- Implemented trilateration as part of this project.

Threat Equation PTE LTD.

Software developer and data analyst

Dhaka, Bangladesh
April 2016-September 2016

○ Threat Equation

- Worked on backend of a Django dashboard.
- Pared server logs for feeding data into the learning model for predicting vulnerability in the application.
- Used libraries such as Chart.js to show visualization of predicted results and related data in dashboard.

Achievements and voluntary experience

2009: Medal in regional mathematical olympiad, Dhaka, Bangladesh.

2010: Medal in regional and national mathematical olympiad, Bangladesh.

2011-2015: Trainer (specially for number theory) in national and IMO math camps.

2012: Participated in Dhaka regional ICPC, rank 18.

2012: Participated in Inter-University Programming Contest, Islamic University of Technology, Bangladesh, rank 13.

2013: Participated in Dhaka regional ICPC, rank 17.

2013: Participated in Inter-University Programming Contest, North South University, Bangladesh, rank 9.

Publications

2019: Topics in Number Theory: An Olympiad Oriented Approach *Masum Billal, Amir Hossein*

2015: Similarity Aggregation for Collaborative Filtering, AIST Conference *Sheikh Muhammad Sarwar, Masum Billal, Mahmudul Hasan, Dimitry I. Ignatov*

2014: A Nice Theorem in Multiplicative Functions, Issue 63, Eureka, Cambridge Mathematical Society *Masum*

Billal

2012: Exponent GCD Lemma, Issue 6, Mathematical Reflections *Masum Billal*

PROJECTS

Localizer 2019

- A self-contained tool for localizing objects in images.
- Used darkflow to implement state-of-the-art YOLO algorithm for object detection in tensorflow.

Improving Collaborative Filtering Based Recommender Systems BSc Thesis, 2016

- Developed a new recommender system.
- Achieved F-1 score of almost 75% on movielens dataset.
- Introduced, implemented ideas of aggregating multiple metrics and tested the hypothesis.
- Currently work on progress to improve it even further.

Otaku Store 2016

- Worked full stack for building a Django framework based e-commerce site.

A Recommender System 2016

- Developed a recommender system based on Multinomial Naive Bayes for learning purpose.

Others

Github: <https://github.com/fifaboy>

LinkedIn: <https://www.linkedin.com/in/billalmasum93/>

Blog: <https://karushib.wordpress.com/>