



# Masum Billal

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## Education

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

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## Experience

- 2017 **Software engineer, R&D,** *March 2017 to present, Reve systems, Dhaka.*  
Currently I am working here as software engineer in R&D section (backend team).
- 2016 **Data analyst and software developer,** *Remote Job, Threat Equation PTE Ltd., Singapore.*  
I worked here as a software developer in Django, Python.

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## Projects

- 2017 **Web, R&D, Machine learning, Surveillance,** *Reve systems (June-July),* In this project, my job was to develop an application that can accurately predict alternative number of a user from their history, Later, I also had to study on GSM networks and develop models to estimate distance and exact location of a user. It had some more interesting features as well.
- 2017 **Networking, Socket and protocol programming,** *Reve systems,* My job in this project was to receive packets from a network interface and parse related information from those packets. There were some other features along with making sure it was optimized such as packets had to be written in files for decoding.
- 2017 **Web security,** *Penetration testing and log analysis,* Reve systems.  
I have also worked on security side. Did some penetration tests on some of our live systems. Apart from that, I am very interested in security and worked on cryptography before.
- 2017 **Web, Optimization,** Reve systems.  
I have worked on repository optimization in java. Also, other applications mentioned above needed better scaling.
- 2016 **Data Analysis,** *Web server log analysis and prediction of vulnerability,* Threat Equation PTE Ltd..  
I analyzed web server logs to predict attacks on a particular site. For the server logs generated from a plugin (an application of the same company), accuracy was 100% with mean absolute error 0% (only for **internal logs**, may be reduced for external ones).

- 2016 **Web Application, Dashboard**, Threat Equation PTE Ltd..  
My role in this project was to build a dashboard using **Django, REST, ChartJS** that would collect data from the plugin and provide visualization and analysis results in the dashboard.
- 2016 – 2017 **Improving Collaborative Filtering Based Recommender Systems, Recommender System**, Platform: Python/C++, BSc Thesis.  
The aim of this thesis was to improve accuracy of recommender systems based on collaborative filtering and develop theory/model for measuring similarity or accuracy or recommended ratings.
- 2016 **E-commerce web application, Otaku Store**, Platform: Python, Framework: Django.  
I worked on this project for an academic course. My objective was to build an e-commerce website for a fast growing community of anime lovers.  
<https://github.com/fifaboy/otaku-store>
- 2017 **Artificial Intelligence, Belief Propagation Simulator**, Platform: C++, This project was a simulation of the **belief propagation**, an established technique in artificial intelligence..  
<https://github.com/fifaboy/belief-propagation>

## Achievements

- 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.

## Publications

- 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](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.
- 2015 **Combinatorial Geometry In Olympiad**, Accepted for Mathematical Reflections in 2015, Masum Billal, Nur Muhammad Shafiullah.

## Skills

Programming languages	C, C++ Python, Java, PHP	Level: Programming contests Level: Academic project.
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Markup/Script HTML, CSS, Javascript, MySQL,  
Javascript, Jinja2  
Others  $\text{\LaTeX}$ , Git, Bootstrap etc

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## 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 Setting problems. Problemsetter at Hackerrank.

Mathematics Finding new results and creating new problems.

Publication Publishing articles or papers on journals.

Dislike Front end development.

Gaming Playing Dota 2, Fifa etc.

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## Others

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

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## References

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