



Masum Billal

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Education

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

Work Experience

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

Projects

- 2018– **E-Veterinary Services**, A govt project for developing a web based system to provide livestock health care, Reve Systems, Language: Java, JavaScript. Framework: Spring boot. .
I am working in both backend and frontend for this project. For backend, we are using Java Spring Boot Framework with thymeleaf as frontend processor powered by JavaScript. This is also my first time working in a scrum team.
- 2017 **C++**, 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, R&D, Algorithms, 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 **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, but I am more interested in my focused areas like development.
- 2017 **Localization**, Geolocation, trilateration and multilateration, Reve Systems.
In this project, I developed a system to predict the location of a device given information about three or more cell towers that device was connected to.

- 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>
- 2016 **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 **Data Analysis**, *Web server log analysis and prediction of vulnerability*, Threat Equation PTE Ltd..
 I analyzed web server logs to predict attacks on the client site to anticipate them before they even happened. The logs were generated from different penetration and vulnerability tests to train the system.
- 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.

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
- 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	Level: Professional development Level: Professional development
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Markup/Script HTML, CSS, Javascript, MySQL,
Thymeleaf, Jinja2
Others \LaTeX , Git, Bootstrap etc

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. Proposed some problems for Hackerrank.
Mathematics Finding new results and creating new problems.
Publication Publishing articles or papers on journals.
Gaming Playing Dota 2, Fifa etc.

Others

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

References

- *Mahbub Majumdar*, Professor, Computer Science & Engineering Department, BRAC University, Buidling-5, Floor-4th, Room: UB50402
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