
EXPERIENCE

- **Ixora Solution Ltd.** Dhaka, Bangladesh
Sr. Data Scientist and Engineer Oct 2020 - Present
 - **ShiftSmart Data Pipeline:** Currently working to build and deploy a data pipeline for an application called *ShiftSmart*. Technologies: GCP, Python, Flask, Docker, etc.
 - **Paper Search:** Currently working as backend developer to build an NLP powered paper searching web application. Technologies: Python, Django, Django Rest Framework, Docker, etc.
- **Shohoz** Dhaka, Bangladesh
Sr. Data Scientist Aug 2019 - Nov 2020
 - **Corona Tracer BD:** Successfully built data pipelines, analytics and visualization and scalable data storage solution for Corona Tracer Bangladesh, a joint venture by Bangladesh government and Shohoz. This project is live at <http://tracer-admin.ctbd.corona-dghs.xyz/>. Technologies: Python, AWS, Boto3, Bokeh, Pandas, Holoviews, Shapely, etc.
 - **Data pipelines:** Built data pipelines for analytics, insights, machine learning services and ETL purposes. Technologies: Python, AWS, Boto3, Pandas, PySpark, Azure Service Bus, Azure Event Hub, Apache Kafka, etc.
 - **Fraud detection:** Created automated fraud detection pipelines.
 - **Exploratory analysis:** Hands on exploratory data analysis of real user data.
 - **User profiling:** Used machine learning to create clusters of users and automated profiling for quest planning.
 - **Data mining, recommendation and others:** Developed automated priority dispatching services and used data mining techniques for provider distribution/trend analysis/recommendation.
- **Auleek** Dhaka, Bangladesh
Machine learning engineer Sep 2018 - May 2019
- **Reve Systems** Dhaka, Bangladesh
Software engineer, RnD Mar 2017 - Aug 2018

PET PROJECTS

- **Flatten NoSQL:** Open source python library for flattening NoSQL-like denormalized data to SQL-like data. Project link: <https://pypi.org/project/flatten-nosql/>
- **Seeding KMeans:** My research on k-means clustering. Here I talk about the results in k-means++ paper and discusses various seeding methods of center initialization. Project link: <https://github.com/proafxin/clustering>
- **Media Recommender System:** This is an ongoing project where I tried to generalize different medias (music, game, video, etc) in one place for recommendation. Project link: <https://github.com/proafxin/media-recommendation>
- **Localizer:** In this project, I used YOLO to detect objects in images. Project link: <https://github.com/proafxin/Localizer>
- **DRF tutorial:** I used this project to teach some people at Ixora Solution how DRF (Django Rest Framework) works. Project link: <https://github.com/proafxin/drfs>

SKILLS

- **Languages:** Python, C, C++, Java.
- **Data engineering:** GCP, Azure, AWS, Kafka, Service bus, Event hub, etc.
- **Data science:** Pandas, Scikit-learn, PySpark, YOLO, PyTorch, Tensorflow, Scipy, Numpy, etc.
- **Backend:** Django, Flask, Django Rest Framework, Flask Restful, SpringBoot, etc.
- **Visualization:** Matplotlib, Bokeh, Holoviews, etc.
- **Tools:** MySQL, Mongo, Git, Jira, Azure DevOps, etc.

PUBLICATIONS

- **Integer Sequences: Divisible, Lucas and Lehmer Sequences:** Masum Billal and Samin Riasat, To be published in Springer Nature soon.
- **Topics in Number Theory: An Olympiad Oriented Approach:** Masum Billal and Amir Hossein, Amazon, ISBN-10: 1719920311.
- **Similarity Aggregation for Collaborative Filtering:** Sheikh Muhammad Sarwar, Masum Billal, Mahmudul Hasan, Dmitry I. Ignatov, AIST Conference. http://link.springer.com/chapter/10.1007/978-3-319-26123-2_23
- **A Nice Theorem in Multiplicative Functions:** Masum Billal, Eureka, The Cambridge University Mathematical Society, Issue 63, 2014
- **Exponent GCD Lemma:** Masum Billal, Mathematical Reflections, Issue 6, 2012
- **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/>

OTHERS

- **Mathematics:** Trainer for the International Math Olympiad team, national and extension math camps, 2011-2015.
- **Programming contest:** Rank 9 at the NSU Inter University National Programming Contest, 2013
- **Programming contest:** Rank 13 at the IUT Inter-University Programming Contest, Rank 13
- **Programming contest:** Rank 17 at the ICPC Dhaka Regional, 2013
- **Programming contest:** Rank 18 at the ICPC Dhaka Regional, 2012
- **Mathematics:** Medals at regional Bangladesh Mathematical Olympiad 2009 and at regional/national Olympiad 2010.

INTERESTS

- Mathematics
- Data science
- Data engineering
- Problem solving. Global rank 132 in Hackerrank mathematics practice section.
- Gaming. Currently I play Dota 2, Assassin's Creed games, The Witcher 3, etc.