

Md Mushfekur Rahman

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RESEARCH INTERESTS

Software Engineering, Software Optimization and Scalability, Parallel and Distributed Systems, High Performance Computing, Machine Learning

EDUCATION

University of Dhaka

Dhaka, Bangladesh

BSc in Computer Science and Engineering (CGPA: 3.58 - Top 10%)

2009-2013

Extra-curricular Activities: Algorithmic problem solving and competitive programming.

INDUSTRY EXPERIENCE

Senior Software Engineer

July 2018 - Present

Therap BD Ltd.

Dhaka, Bangladesh

- Developed a file transfer gateway application to streamline file transfer between Therap app and SFTP servers (external systems).
- Planned and developed Salesforce Live Chat integration project as a technical lead. Imported issues generated over Salesforce side using REST APIs and developed a data sync mechanism between both side. Tech Stack: Spring, JEE, Salesforce REST API, OAuth 2.0.
- Re-designed and developed Therap Issue Tracking application to collect user reported issues. Simplified the workflow and improved issue searching infrastructure for faster search results. Tech Stack: Spring, JEE, Oracle RDBMS
- Designed and developed Telephony integration (IVR) with Therap Electronic Visit Verification (EVV) system. Designed HATEOAS driven REST APIs for it. Tech Stack: Spring, PlumVoice Fuse+ IVR.
- Performed various R&D work for development tools (e.g. static code analyzers, application profiling and performance monitoring tools, web application security analysis etc.) that have potential usage in Therap.
- Member of core code reviewer panel for both web application and mobile (Android and iOS) platform. Ensuring best practices for design patterns, code quality and maintainability.

Software Engineer II

July 2016 - June 2018

Therap BD Ltd.

Dhaka, Bangladesh

- Developed a Notification Delivery System and User Activity Tracking System. The system handles around 2 Million notifications per day. Admin users can generate report and view user activities to monitor usage and user behaviour. Tech Stack: Spring, JEE, JMS.
- Migrated and redesigned legacy Therap Secure Communication (an email like platform for only Therap users) codebase using newer frameworks to match with newer standards and better user experience. Optimized data structure, queries, improved UI and JS plugins which reduced page loading time up to ten times. Tech Stack: Spring, JEE, Bootstrap.
- Updated Excel Reporting Framework to use newer format (.xlsx) and added support for streaming excel building/reading to handle very large amount of data in a memory efficient way. This change reduced generated file size up to 30% and resulted in a faster response time. Tech stack: Spring, JEE, Apache POI.

Software Engineer I

July 2014 - June 2016

Therap BD Ltd.

Dhaka, Bangladesh

- Designed and developed a fully configurable data collection form with custom dynamic questionnaire which is being used to record services provided to users. Tech Stack: Spring, JEE, Bootstrap, jQuery.
- Unified form search framework for archives. Simplified framework usage for developers.

Associate Software Engineer

July 2013 - June 2014

Therap BD Ltd.

Dhaka, Bangladesh

- Migrated the codebase of Therap Android application to use newer Gradle based Android build tool from legacy Maven tools and was able to cut down build time to one third.
- Developed REST APIs and Android app feature for multiple user profiles where users will be able to customize separate set of privilege and applications for each profile.

COMPETITIONS AND HONORS

- National Hackathon 2015. Developed an application to help preventing Sexual Harassment (one of the prominent problems of the country) in a 36 hour long planning, designing and coding sprint.
- BASIS Code Warrior's Challenge 2014. Developed a debit/credit card manager app (MyCards) for iOS. Rank: Honorable Mention.
- CUET RMA RoboRace 2011. Rank: 6th (Team: DU Hello World).
- Bangladesh University Inter-University Collegiate Programming Contest 2011. Rank: 9th (Team: DU Hello World).
- Daffodil Inter-University Collegiate Programming Contest 2010. Rank: 12th (Team: DU Hello World).
- BUBT CSE Fiesta 2010. Rank: Honorable Mention (Team: DU Hello World).
- CSEDU Intra-Batch Programming Contest 2009. Rank: 7th.

ACADEMIC AND COMPETITION PROJECTS

Sandman: An Intelligent Sleep Quality Analyzer

- Developed a sleep quality prediction and lifestyle change recommendation engine for better sleep quality.
- Used C4.5 Decision Tree to predict user's sleep quality from daily activities. Knowledge Based-Collaborative Recommender System was used to suggest daily lifestyle changes to improve user's sleep quality.
- Tech Stack: Java Enterprise Edition, Oracle RDBMS, Weka, Apache Mahout

An Automated System for Red-eye Artifact Correction in Digital Images

- Developed this system for Undergraduate Thesis under the supervision of professor Dr. Md. Haider Ali of the Department of CSE of the University of Dhaka.
- Tested the system with around 1K publicly accessible images with red-eye effect and it resulted in 92% accuracy and without any model training overhead.

Prottoyee: An Interactive Mobile Application to Help Preventing Sexual Harassment

- Developed a Heatmap module for the app using Google Maps API and Elasticsearch as storage. Users could see potential areas where it is more likely to get harassed and also get notifications while passing through any area that might require extra caution.
- Tech Stack: Java, Spring, REST API, Elasticsearch, JMS, PostgreSQL, Google Map API, Android SDK

Distributed Network File Storage

- Developed a network file storage similar to Google Drive for Distributed Systems course final project.
- Key idea was borrowed from Google File System paper and implemented using Java.
- Tech Stack: Java, Socket Programming

Line Follower Robot

- Classic line follower robot that uses photo sensors to detect colored paths on a white plane and take turns accordingly. It was built as the course final project of Computer Peripherals and Interfacing Lab.
- Designed and developed navigation system of the robot reading data from various sensors.
- Tech Stack: C/C++, Atmega32 Microcontroller, PBASIC Interpreter

Distributed Mutual Exclusion Algorithms Simulator

- Simulated three very important distributed system algorithms: centralized, election and token ring algorithm. The message passing was done using Java Sockets and built an interactive UI using Java Swing API.
- Tech Stack: Java, Sockets, Swing API

TECHNICAL SKILLS

Languages: Java, SQL (Oracle, PostgreSQL), JavaScript, Swift, C/C++

Frameworks and Platforms: Spring Framework (MVC, Security, Data, Integration, Batch), JEE, JPA, EJB, CDI, JMS, React, Hazelcast, TensorFlow, OpenCV, jQuery, Android app development, iOS app development

Developer Tools: Git, Docker, Jenkins, Gradle, Unit Testing (JUnit, TestNG, Mockito), Static Code Analysers (PMD, SpotBugs, Checkstyle, Sonarqube), JVM Profiling and Tuning (JMC, JFR), VS Code, Visual Studio, IntelliJ

REFERENCES

Available Upon Request