



Ayushi Mathur

CONTACT INFORMATION

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Date of Birth: 14 Dec, 1991

EDUCATION

B.Tech, Computer Science and Engineering
IIT Guwahati, Assam, India

July '09 - May '13
GPA: **7.23/10**

INTERESTS

Machine Learning, Data Mining, Distributed Computing, Databases Management Systems

WORK EXPERIENCE

EMC Corporation, Associate Software Engineer Management Scalability

August'13 - present

1. Developing efficient code in JAVA and Python to scale a product called VPLEX which is a storage virtualization software featuring high availability, cloud computing and seamless data migration.
2. Re-architecting the components of VPLEX to scale it to support more than 32000 logical storage units as opposed to current scale of 8000.
3. Developing algorithms to improve query processing time using concepts of distributed computing.
4. Presented an idea on 'Intelligent Defect Relationship Tool' in EMC's Annual Innovation Conference and chosen among the finalists.

Technologies: JAVA, Python, Eclipse, Git, Chimera

IIT Guwahati, Bachelor's Thesis Project Data Mining

July'12 - Apr'13

1. Designed an algorithm based on Apriori principle for **data-mining over multiple databases**.
2. Key feature was to derive association rules across databases without collation and configuration changes of the individual databases.
3. Overcame the shortcomings of existing algorithm with respect to multiple scans of database and more time complexity.
4. Researched to prove that ordering databases based on increasing minimum-support can optimize an existing algorithm.
5. Proposed algorithm was developed in C++ and was three times more efficient.

Technologies: C++

Sarada Research Labs, Research Intern Distributed Computing

May'11 - July'11

1. Built a SwitchDBServer(SDBS) System that allowed switching between day and night shift servers for Patient Services Accounting System deployed at Ramakrishna Sevasharama Hospital, Vrindaban.
2. The key aspects of the switchover system are to provide support for
 - i) both scheduled and on-demand switch-overs,
 - ii) aborting a switchover process and continuing with the current server,
 - iii) transparency of switchover operations, and
 - iv) simplified management via a dashboard style UI.
3. Provided support for transparency of switchover operations, and simplified management via a dashboard style UI.
4. Developed on Oracle 10g Express Edition database using Oracle Application Express 4.0.2.
5. Submitted a paper titled "SwitchDBServer: A Case of Distributed Computing in Shifts", at the 8th International Conference on Distributed Computing and Internet Technologies, Bhubaneswar,

Odisha.

Technologies: PL/SQL, SQL, APEX 4.0.2

**iRunway, Intern
Patent Litigation**

May'12 - July'12

1. Primarily worked on Patent Litigation based technical consultancy.
2. Presented deep and thorough analysis containing potential infringer for patent "Mobile cellular telecommunications infrastructure based multi-user applications"(US7801541).
3. Validity analysis of patents "Electronic currency, electronic wallet therefor and electronic payment systems"(US7590602) and "Light emitting panel assemblies"(US7434973) were done that required finding relevant prior arts that could have potentially invalidated the patents.
4. Got the Best Intern Award, for my analytical skills.

**COURSE
PROJECTS**

Data Mining : Mining over Wiki revision history files

July-Nov 2012

1. Using Apriori algorithm mined association rules from Wikipedia revision history dump between authors and pages they edited.
2. Added functionalities like Auto-Update of pages and finding potential infringer who added mal-information.

Technologies: XQUERY, XML, Stylus Studio

Database : Project on Hadoop

Aug-Nov 2011

1. Developed and executed Map-Reduce jobs on a self built Hadoop cluster of 12-14 computers with more than 100GB of unstructured data.
2. Observed its behaviour in node-failure scenarios and uploaded variable loads ranging from 10Gb - 100Gb on the cluster.
3. Performed analysis of time taken to copy data from local system to HDFS for a multi-sized sample set.

Technologies: Hadoop, JAVA

Seminar : Distributed Database System

Jan-April 2012

1. Studied "Recovery in Replicated Distributed Database System" in various failure scenarios.
2. Developed algorithm for a site recovery in a site failure scenario.
3. Developed a heuristic approach to solve problems of network partitioning/Communication failure.

System Software : Web Application

Sept-Oct 2010

1. Created an on-line examination system and a course allocation system for IIT Guwahati.
2. Added questtakenion shuffling feature, timer and optional negative marking to reduce human dependency on invigilation.
3. Reduced time for setting examination paper and appearing for students using a simplified UI.
4. Developed algorithm for fair course allocation based upon grades and preferences of students.

Technologies: MySQL, PHP, HTML, Adobe Dreamweaver

System Programming : Web And Desktop Application

Feb-Mar 2011

1. Modeled an efficient work-flow activity diagram for IIT Guwahati's Hospital Management System.
2. Developed an automation software to improve user-experience of the system by reducing the operational setup.
3. Facilitated inter module communication thus providing faster service to patients.

Technologies: JAVA, PHP, HTML, UML, SQL and ORACLE

Software Engineering : Software Development

Jan 2011

1. Modeled an interactive quadratic equation solver for school children.
2. Designed an interactive and engaging portal for regular student-teacher discussions.
3. Added features like tutorials, practice exercises, tests and hints/solutions.

Technologies: Visual Basic, Microsoft Visual Studio 2010

Operating System : PINTOS

August 2011

Worked on concepts of Operating System (threads, process-creation, scheduling algorithms, file-systems etc).

Technologies: C, PINTOS

**TECHNICAL
SKILLS**

Languages: JAVA, Python, LUA, C, C++

Tools: Eclipse, APEX, Latex, Stylus Studio, NetBeans

Platforms: Windows XP/Vista/7, Linux (Ubuntu, Linux Mint)

Database systems: MySQL, Oracle11g

Scripting Languages: PHP, JavaScript

Web Development CMS: HTML, Adobe Dreamweaver, WordPress

COURSEWORK

Theoretical

Data mining

Computer Peripherals

Algorithms

Computer Networks

Practical

Operating System

C/C++

Databases

Compilers

**PERSONAL
ACHIEVEMENTS**

Academic

Secured AIR 1811 out of 4,00,000 students in IIT-JEE 2009.

Sports

Got selected for Inter IIT Sports Meet held at IIT Kanpur and IIT Delhi.

Won 2 golds in intra college sports competition "SPARDHA" .

Extra-Curricular

Secured 2nd position in the dance competition at ANTARAGNI, IIT Kanpur.

Awarded best actor for dramatics in General Championship.

Directed a play and stood second in inter hostel cultural festival "Manthan".

Student Representative in the Computer Science Department.

Position of

Responsibility

Social

Responsibility

Senior Executive of Corporate Social Responsibility Team at EMC Corporation, specifically working in the field of Child Education.