

Soumyakanti Mandal

FULL-STACK SOFTWARE ENGINEER · STARTUP EXPERIENCE · INTERESTED IN BUILDING COMPANIES

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Professional Experience

GoZoomo.com

Bangalore, India

SOFTWARE ARCHITECT

September 2014 - Present

- As the **founding engineer**, was responsible to design, develop and deliver full-stack end-to-end solutions for the business from scratch, building and maintaining the infrastructure in cloud, leading critical projects, growing the tech team and contribute to overall company vision as a founding core team member.
- Notable technical achievements:
 - Engineered Whatsapp client using **Python** for lead platform, effecting 10x buyer liquidity for customer acquisition team.
 - Developed a scraping engine using **Clojure** to collect and analyze legitimate seller leads from web; resulting 10x growth of seller liquidity.
 - Developed a scalable and asynchronous notification system using **RabbitMQ** and Clojure, resulting fast and rapid delivery of bulk notification including SMS, Email and Push Notification.
 - Developed desktop and mobile websites (**AngularJS** and **Twitter Bootstrap** for client side, **Erlang** for REST APIs and back-end) of Go-Zoomo, able to serve up to 600k requests per minute. Re-wrote parts of Erlang driver for MongoDB.
 - Led the inception and design of seller portal, causing huge boost to seller-buyer interaction and pricing correction. It was developed in Java and used non-blocking **Undertow** connections.
 - Introduced **Thrift** in GoZoomo, providing an unified and validating interface for micro-services used internally.
- Designed micro-services architecture of GoZoomo stack; led the DevOps team, development of infra and CI/CD in AWS for entire stack.
- Periodically took technical interviews for recruitment into tech team; mentored and inspired juniors.
- As a result, the company ensured Series A funding, and was appreciated by the CTO in subsequent appraisal rounds.

BankBazaar.com

Bangalore, India

SOFTWARE DEVELOPMENT ENGINEER

June 2012 - August 2014

- Full-stack development on several channels for BankBazaar.com marketplace and other Whitelabels.
- Key achievements:
 - Pioneered development of integration web-services (REST/SOAP/RMI) with the most prominent banks in India (**ICICI/HDFC/CITI** etc.), resulting recurring faster roll-out and integration of new and existing channels. Was made primary owner of the same.
 - Was made lead developer and primary owner of internal web service in **Clojure** responsible for dynamic content generation.
 - Built a **SSO(Single Sign On)** solution for Pre-approved Offers product by ICICI bank using **OpenSAML**, causing increased Credit Card and Home Loan conversions. This has proved to be one of the best products for BankBazaar and ICICI in the long run.
 - Built v1 of BankBazaar marketplace onboarding flow, causing 4x conversions and later was adopted by all such flows in marketplace.
 - Closely involved in infrastructural growth involving physical machines, cloud, maintenance, DevOps and reporting. Mostly used **Salt-Stack**, Python and shell scripts. Have led many severe security issue mitigation sessions with minimum TAT.
- Was promoted to code reviewer and charged with end-to-end project responsibility within 5 months of joining as a fresher.
- As recognition of exemplary performance, was awarded **highest promotional rating** in appraisal.

IBM Extreme Blue Program (IBM India Software Labs)

Bangalore, India

SOFTWARE ENGINEERING INTERN

May - July 2011

- Project title:** Efficient Collaborative Decision Making with Mobility; **Client:** Mumbai Airport Authority
- Project objective:** To design a low cost mobile solution for managing complex hierarchical decision tasks in reduced visibility condition
- Successfully built a proof-of-concept Airport CDM mobile platform implementation with low network bandwidth usage.
- Used JQuery mobile and HTML5 Web SQL for front-end and Java, Websphere Mobility Pack, DB2 and Websphere MQ for back-end.
- The solution developed was projected to have a Cost-to-benefit ratio of **1:9** and expected break-even of **2 years**. Based on the stats, technology was transferred to a IBM developer team for full and end-to-end development.
- Was awarded **Pre-placement Offer** from IBM for excellent performance.

Technical Skills

Languages	Proficient: Java, Clojure, C, Python, JS; Intermediate: Erlang, Groovy, Scala, Go, Ruby
Frameworks	Spring, Compojure + Ring (Clojure), AngularJS, Django (python), Express, ES6, Twitter Bootstrap, Hibernate
Stacks	Elasticsearch, MongoDB, Postgres, MySQL, NGINX, Wildfly, Tomcat
Systems	BASH/awk/perl scripting, Saltstack, Puppet, Jenkins, EC2, AWS Lambda, GNU/Linux

Education

Indian Institute of Technology, Kharagpur (IIT)

Kharagpur, West Bengal, India

B.TECH.(HONS.) IN COMPUTER SCIENCE AND ENGINEERING

2008 - 2012

- Awarded **MCM(Merit-Cum-Means)** Scholarship (awarded to promising students in IIT).

Academic Projects/Research Experience

Cryptology Division, Indian Statistical Institute (Prof. Subhamoy Maitra)

Kolkata, India

SUMMER RESEARCH INTERN

May - July 2010

- Researched means of recognizing patterns in weak states of RC4 stream cipher.
- Implemented a technique to identify possible set of states that resemble **Finney States**.

Bachelor Thesis, IIT Kharagpur (Prof. Dipankar Sarkar & Prof. Chittaranjan Mandal)

Kharagpur, India

TITLE: EXTENDING PRES+ BASED EQUIVALENCE CHECKING FOR PARALLEL BEHAVIOUR

August 2011 - April 2012

- Formulated behavioural models of real-time systems using **PRES+** and **Timed FSMD** to verify timing properties and path-based equivalence.
- As a real-life example, modeled an Adaptive Cruise Control mechanism using the same verification scheme.

Notable Academic Summer/Term Projects (IIT Kharagpur)

Kharagpur, India

- Successfully performed **DPA** (Differential Power Analysis - a variation of Side Channel Attack) on DES using **SASEBO** (Side-Channel Attack Evaluation Board). Used Xilinx 7.1 and implemented the algorithms in Verilog. Also optimized **SPA** (Simple Power Analysis) for RSA. This was done during summer break, May-June, 2009 and winter recess, December, 2009 under Prof. Debdeep Mukhopadhyay, IIT KGP.
- Implemented a Recommendation engine to suggest **Friend in a social network**, as a part of Machine Learning course. Designed the problem as a Classification Problem, and applied Rank Heuristics to train a SVM classifier.
- Build a Dynamic Large Polygonal Mesh Renderer and Editor (taking .ply or .obj files as input) using C++ and GLUT (OpenGL Utility Toolkit) as part of Computational Graphics Course. Added a functionality of 3D Convex Hull Computation and rendering and applied significant optimizations.

Extracurricular Activity

Bitwise, Algorithmic Programming Contest, CSE Dept, IIT KGP

IIT Kharagpur

WEB AND SYSTEMS TEAM HEAD, PROBLEMS TEAM MEMBER

2012

- Built the website for Bitwise 2012 and Enigma using PHP. Added several enhancements e.g. monitoring, ticker, better submission interface.
- Built an Online Judge capable of evaluating C/C++/Java/Python code against sample test-cases and update results and leaderboard.
- Contributed algorithmic problems for contest set. The optimum difficulties and tricks made the contest a huge success.
- Co-ordinated PR for the event, resulting top participants from around the world e.g. *Tourist*, *Rudy* etc. Facebook and Google were title sponsors.
- As an added responsibility, managed security and mail servers of CSE Department for the entire year.

Overnite Programming Contest, endorsed by ACM ICPC and Kshitij, Tech Fest, IIT KGP

IIT Kharagpur

TECHNICAL COORDINATOR

September 2010 - January 2011

- Designed contest problems for over 3000 participants in knockout round and 25 finalists.
- Built online judge using Django, implemented a distributed system (celery as message broker) to evaluate submissions using multiple workers.
- Compliance with ACM rules and smooth co-ordination earned praise from the fest management and ACM as well.

Opensoft Competition, Technology General Championship

IIT Kharagpur

CAPTAIN, RAJENDRA PRASAD HALL OF RESIDENCE

July 2011 - April 2012

- Was responsible for leading RP Hall team in Opensoft event, Tech GC. Led a team of 15-something students.
- Designed and implemented a cross-platform voice-controlled file browser for the disabled as problem statement.
- Mostly used Python for designing GUI. CMU Sphinx was used for voice processing.

Product Design Competition, Innovation Cup, Technology General Championship

IIT Kharagpur

CAPTAIN, RAJENDRA PRASAD HALL OF RESIDENCE

July 2011 - April 2012

- As recognition of success in previous year, was made captain for the same event. Led a team of 10 students.
- Designed a Condensing Steam Turbine Generator consuming biomass fuel as problem statement.

Awards & Achievements

NON-ACADEMIC

2014 **Runner-up**, AngelHack Bangalore Hackathon

Bangalore, India

2010 **Joint runner-up**, Overnite ACM ICPC Algorithmic Programming Contest, IIT KGP Tech Fest

Kshitij, India

2009 **Silver Medal**, Inter-hall Product Design Competition, Tech GC, IIT KGP

IIT Kharagpur

2009 **Best Fresher in Technology**, Rajendra Prasad Hall of Residence

IIT Kharagpur

ACADEMIC

2008 **Selected for admission**, B.Stat. program, Indian Statistical Institute

Kolkata, India

2008 **Achieved Rank 23 in Engineering & Rank 107 in Medical**, West Bengal Joint Entrance Examinations

West Bengal, India

2006 **Awarded NTSE scholarship**, National Talent Search Examination by Government of India

India