

# 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

<b>Languages</b>	<b>Proficient:</b> Java, Clojure, C, Python, JS; <b>Intermediate:</b> Erlang, Groovy, Scala, Go, Ruby
<b>Frameworks</b>	Spring, Compojure + Ring (Clojure), AngularJS, Django (python), Express, ES6, Twitter Bootstrap, Hibernate
<b>Stacks</b>	Elasticsearch, MongoDB, Postgres, MySQL, NGINX, Wildfly, Tomcat
<b>Systems</b>	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	<b>Runner-up</b> , AngelHack Bangalore Hackathon	Bangalore, India
2010	<b>Joint runner-up</b> , Overnite ACM ICPC Algorithmic Programming Contest, IIT KGP Tech Fest	Kshitij, India
2009	<b>Silver Medal</b> , Inter-hall Product Design Competition, Tech GC, IIT KGP	IIT Kharagpur
2009	<b>Best Fresher in Technology</b> , Rajendra Prasad Hall of Residence	IIT Kharagpur

### ACADEMIC

2008	<b>Selected for admission</b> , B.Stat. program, Indian Statistical Institute	Kolkata, India
2008	<b>Achieved Rank 23 in Engineering &amp; Rank 107 in Medical</b> , West Bengal Joint Entrance Examinations	West Bengal, India
2007	<b>Selected for Maths Olympiad Camp</b> , Indian National Mathematics Olympiad	Kolkata, India
2006	<b>Awarded NTSE scholarship</b> , National Talent Search Examination by Government of India	India