

## Bhavdeep Sethi

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### RELEVANT EXPERIENCE

#### Twitter, Inc.

Staff Software Engineer  
Senior Software Engineer  
Software Engineer II

San Francisco, CA  
Dec '19 - Current  
Oct '18 – Nov '19  
Feb '16 - Sep '18

- Tech Lead for Ads Marketplace team, a mix of Software Engineers and Data Scientist, responsible for balancing Twitter Revenue, Advertiser Value and User Experience. Ads Marketplace owns the Budget controller, Ads Auction, and dynamic operating points in the ad stack.
- Led the design and implementation of Ads Marketplace Re-architecture.
  - We created a config-based abstraction that became the foundation of how ad products are defined, configured, classified, and reported at Twitter.
  - By de-coupling major systems like Prediction and Billing, it reduced turnaround time to add new ad products from 3 weeks to 20 mins. All subsequent ad products are now built using the new Product Config introduced by the re-arch.
- Led the design and implementation of separating out the Budget Pacing Controller from the Ads Serving stack.
  - It allowed the PID controller to become more stable and enabled experimentation with advanced controller techniques like Reinforcement Learning.
  - Budget Pacing Controller being one of the core components in ad-serving, this was a multi-quarter cross functional effort to ensure revenue parity with extensive experimentation. [Java, ZooKeeper, Distributed Systems]
- Involved in shepherding multiple teams across the ads organization for cross functional projects.
  - By working on different projects across the ads stack, I've built a unique skillset to give technical advice during the design phase for projects operating at the organization level.
- Involved in design and implementation of breaking the monolith AdServer platform to micro services while maintain existing scale (15k qps) and revenue (\$2.6 Billion / year). [Java, Distributed Systems]
- Responsible for stabilizing and scaling the Lift Measurement platform (streaming and batch) to handle more scale. [Java, Scala, Apache Heron, Hadoop]
- Developed pCTR model for extending existing twitter campaigns to web exchange including feature transformation, feature selection and hyper parameter tuning. [Java, Scala, S3, Spark, Machine Learning]

#### TellApart (now part of Twitter, Inc.)

Software Engineering Intern

San Francisco, CA  
June '15 - Aug '15

- Implemented the Online Training of the User Score Distribution Model in Bidder Service to rank users [Java 8, Guice, Redis]
- Implemented Collaborative Filtering with Matrix Factorization Algorithm using Alternating Least Squares. [Java 8, Spark, ML-lib]
- Developed platform to generate and evaluate various Recommendation models.

#### Flipkart.com

Senior Software Development Engineer  
Software Development Engineer  
Full Stack Developer (MIME360)

Bangalore, India  
July '12 - July '14  
Oct '11 - July '12  
Aug '10 - Sep '11

- Designed and developed a platform that ingested over 1.2 TB data everyday from heterogeneous systems, normalized it, transformed it to user pivot and generated meaningful insights about the user [Java, YARN, Hbase, Storm, Kafka, TitanDB, Couchbase, Vertica, Dropwizard, ElasticSearch, MariaDB]
- Involved in the design and development of a new workflow engine for the Traffic Generation Team to achieve high throughput by parallelizing the workload using the Actor model [Scala, Akka, Hbase, RabbitMQ, ElasticSearch]
- Responsible for re-designing and developing the service responsible for sending all Transactional/Marketing communication (Email/SMS/PushApp Notifications) to the customers of Flipkart [RabbitMQ, Redis, HBase, MySQL, Apache Velocity]
- Implemented Recommendation Module for mp3 and eBooks using Item to Item Collaborative Filtering [Java, MapReduce, Redis]
- Developed the Meta and Content Ingestion System for Digital Platform scraping feeds in various formats (xml, json, csv) [Java, Spring Core, Hibernate, MySQL, CouchBase]
- Responsible for developing the company's core API along with modeling the Content Managing System (CMS) for the content [PHP, Memcache]

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### TECHNICAL SKILLS

Computer Languages

Java, Python , PHP, Scala, Perl, Ruby, C, C++, Node.js

Relational Store

MySQL, Oracle, MariaDB

Tuple / Columnar /Document Stores

Redis, Memcached, Couchbase / Hbase / CouchDB, MongoDB, ElasticSearch

Frameworks

Play+Akka, Spray, Ruby on Rails, Dropwizard, Spring 3.0, Jersey, Express

Message Frameworks

Kafka, RabbitMQ

Big Data  
AWS

Hbase, Spark, MapReduce, Hive  
EC2, EBS, SQS, SNS, SES, S3, EMR

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## EDUCATION

**Columbia University**, New York, NY

Master of Science in Computer Science, Machine Learning

Dec '15

Relevant Courses: Machine Learning, Algorithms, Cloud & Big Data, Natural Language Processing

**University of Mumbai**, India

Bachelor of Engineering, Information Technology

June '10

First Class with Distinction

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## ACHIEVEMENTS

- MSTA Fellowship - Columbia University, Spring '15
- Teaching Assistant – Big Data Analytics, Cloud & Big Data, Modern Internet App Development