

# Sandeep Raju Prabhakar

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## Technical Skills

### Programming:

- ❑ **Proficient:** Python, Kotlin, SQL
- ❑ **Familiar:** Golang, Java, Scala, JavaScript, BASH, PHP, C++, C, HTML, CSS

### Other Technologies:

- ❑ **Proficient:** Apache Spark, Kafka, Avro, Docker, Maven, PostgreSQL, Redis, Git, Django, Flask, Emacs, Linux CLI
- ❑ **Familiar:** Spring Boot, Kubernetes, AWS, C\*, Elasticsearch, MongoDB, DC/OS, MySQL, Heroku, Tensorflow & Keras

## Work Experience

**Salesforce.com, Inc.** - Palo Alto, CA

01 May 2018 - Current

*Activity Insights, Salesforce - Senior Member of Technical Staff*

- ❑ Working on developing kafka-streams based data pipeline that power engagement and alerts platform.
- ❑ Developed in-house Apache Spark workflow job scheduler called Alcatraz and lead the migration of Spark jobs to it.
- ❑ Developed Devenv CLI in Golang to aid in day to day development that brings huge boost in productivity for the developers.
- ❑ Developing docker based zero-downtime, scalable and pluggable extraction pipeline platform v2 called Dumbledore.

**Salesforce.com, Inc.** - Palo Alto, CA

09 Jan 2017 - 30 Apr 2018

*Activity Insights, SalesforceIQ - Member of Technical Staff*

- ❑ As a part of the founding member of the team, developed a data platform to power "Einstein Insights" for "Salesforce Inbox".
- ❑ Data pipelines were built using Kafka, Apache Spark (Scala) and PostgreSQL to process ~100M events/day.
- ❑ Built scalable HTTPS REST API to serve Insights for mobile applications from C\* and PostgreSQL data stores using Kotlin.
- ❑ Architected & implemented a scalable rule processor using Drools BRMS for generating complex temporal Insights.

**Expedia, Inc.** - Chicago, IL

13 Jun 2016 - 02 Sept 2016

*Software Development Engineering Intern*

- ❑ Developed hotel booking reconciliation tool in Java Spring Boot on AWS that monitors ghost bookings in the inventory.
- ❑ Developed the property management portal using ReactJS, Java Spring Boot & MongoDB and deployed on AWS.

**Plivo, Inc.** - Bangalore, India

07 Jun 2013 - 14 Aug 2015

*Software Engineer*

- ❑ Was part of a three member Product Engineering team responsible for architecting, building and scaling the platform.
- ❑ Authored an open source rate limit queuing system called SHARQ (<http://sharq.io/>) for the SMS infrastructure at Plivo.
- ❑ Developed a Call & SMS dispatcher in Python; led the process of porting the SMS routing & billing system to Golang.

## Education

**Northwestern University** - 633 Clark Street, Evanston, IL 60208

16 Dec 2016

Master of Science in Computer Science - GPA: 3.94 / 4.00

**PES Institute of Technology** - 100 Feet Ring Road, BSK III Stage, Bangalore - 560085, India

04 May 2014

Bachelor of Engineering in Computer Science - GPA: 8.50 / 10.00

## Academic and Personal Projects

**Foodrop, Inc.** - Northwestern University, Evanston, IL

Jun 2016 - Dec 2016

*Co-founder and Lead Software Engineer*

- ❑ Conceived and built Foodrop, an aggregated meal delivery startup as a part of NUvention entrepreneurship program.
- ❑ Developed backend ordering and dispatch platform using Python & Parse BaaS and iOS & Android applications with Ionic.
- ❑ Profitable from first week of operations; served more than 500+ customers with ~100 orders/day for 6 months.
- ❑ One of the few startups to be featured on the coveted "[Ideas @ Northwestern](#)" list.

**Sulley: An open source framework for building SMS bots** - Evanston, IL

Apr 2016 - Jun 2016

*Author*

- ❑ Developed a framework to help developers build SMS bots using Twilio or Plivo with very few lines of Python code.
- ❑ Lets the user perform generic tasks over SMS by defining commands bound to functions using Python decorators.
- ❑ Sulley was used to power SMS notifications and implement order confirmation for Foodrop.

**Python Data Workflow Framework for RISKCOG** - EECS Department, Northwestern University, Evanston, IL Jan 2016 - Dec 2018*Researcher & Software Developer*

- ❑ Worked towards evaluating machine learning libraries that support online learning to aid a mobile security project with Tencent Inc, to model mobile phone usage patterns to classify the mobile phone user as 'owner or imposter.
- ❑ Developed a data workflow framework on top of Tensorflow to help run large scale experiments for thousands of users.
- ❑ The [results of this research](#) is published as a preprint in "IEEE Transactions on Mobile Computing 2019".

**SHARQ: An open source rate limiting queuing system** - Plivo Inc., India, Bangalore

Jul 2014 - Aug 2014

*Author*

- ❑ Architected and implemented a rate limiting queue based on the novel approach conceived by [Alan Shreve](#).
- ❑ The project, written in Python using Gevent and Flask on Redis is open source and available at <http://sharq.io> and [Github](#).
- ❑ A few startups including Plivo are using SHARQ in their infrastructure as of today for flexible throttling.

**Web based Telephony System on a Private Cloud** - PES University, India, Bangalore

Jan 2013 - May 2013

*Software Developer*

- ❑ Created a tool using Python and Asterisk to abstract the process of managing a telephony infrastructure on private cloud.
- ❑ Developed an IVR builder interface and backend server to offload call-flow logic to a system connected over the network.
- ❑ Prototyped a new JSON based format to represent a call flow or an IVR similar to today's Twilio's TwiML or Plivo XML.

**Conference and Workshop Presentations****RiskCog: Unobtrusive Real-time User Authentication on Mobile Devices** - IEEE Transactions on Mobile Computing

Jan 2019

*Researcher & Co-author*

- ❑ Worked on achieving user authentication based on mobile phone usage pattern during masters at Northwestern.
- ❑ This work appeared on "IEEE Transactions on Mobile Computing 2019" (DOI 10.1109/TMC.2019.2892440).

**Kotlin @ Activity Insights** - Salesforce, San Francisco, United States

Jul 2018

*Technical Speaker*

- ❑ Presented a talk on my experience of using Kotlin at Activity Insights since early 2016.
- ❑ The talk was attended by almost all Salesforce Sales Cloud Architects and many Principal Engineers across the company.

**Apache Spark Bay Area Meetup** - Palo Alto, United States

May 2017

*Technical Speaker*

- ❑ Presented a talk titled "Dependency injection in Apache Spark Applications" based on an internal project at Salesforce.
- ❑ Introduced a novel way to inject dependencies in a distributed Apache Spark applications using Guice.

**PyCon India 2014** - Bangalore, India

Sept 2014

*Technical Speaker*

- ❑ Selected from a pool of more than hundred talk proposal to present my project at PyCon India 2014.
- ❑ Presented a talk titled "SHARQ - An API queueing system built at Plivo!" based on the project I authored.

**Patents, Awards and Scholarships****Patent #20190140995: Action response selection based on communication message analysis** - Salesforce, Palo Alto

May 2019

- ❑ For the email insight generation pipeline built to power "Salesforce Inbox".

**Most Heroic Hack @ SalesforceIQ Hackday 2018** - Salesforce, Palo Alto

May 2018

- ❑ For working on a PoC using OpenFaas and Apache Kafka to build a new way for generating email Insights.

**Distinction Awards** - PES University, Bangalore, India

Aug 2009 - Jun 2013

- ❑ For academic excellence in multiple semesters during undergraduate studies.

**MHRD Scholarship** - Government of India, India

Aug 2009

- ❑ For academic excellence by securing high scores in the Pre-University examination.