

# DAYANAND SHANBHAG

## MACHINE LEARNING ENGINEER

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## SUMMARY

Technical Architect with over 10 years experience working with Investment banks. Extensive experience in building end to end distributed systems for Reference Data, Market Risk and other financial domains. Hands on full stack development experience with server side, middle-ware and database technologies.

## SKILLS

**MACHINE LEARNING:** Python, NLTK, Spacy, Scikit-learn, Keras, Supervised Learning, Natural Language Processing, Unsupervised Learning, Deep Learning, Numpy, SQL, Git, Webscrapping, Oracle, Matplotlib, Seaborn, AWS, Jupyter, PySpark, Flask, Pandas

**SOFTWARE ENGINEERING:** Rest Api development, Java, Spring, Kafka, Distributed Caching, JMS Messaging, Elastic Search, Solr, Docker, Microservices, Teamcity CI Tool, AWS, Git, Oracle, Sql Server, Hbase, Hadoop

## PROJECTS

### Content Based Recommendation System for Apparel

- Fetched data by querying the Amazon Product Based APIs
- Used NLP and Word2Vec techniques to parse product description and Keras to process image data
- Created a Flask based Web application to display recommendations for a given product

### Collaborative Recommendation Model for Movies

- Used Spark ML based Matrix Factorization model to movies to the users
- Created a spark cluster on AWS to process 20 million user ratings

### Movie Box office Predictions

- Scraped Movie data using BeautifulSoup
- Cleaned data using Pandas and feature engineered the Actors and Directors data
- Built a prediction model using LinearRegression algorithm

### Stackoverflow Tag prediction

- Used OneVsRestClassifier and LogisticRegressor to predict Tags for any given question
- Used SQLite to load and pre-process 6 million rows of data
- Exposed the model as a rest based api using Flask

## EDUCATION

### SBMP, India

#### Masters Computer Application

Java Certified Developer

Oracle Certified Professional

Confluent Certified Developer for Apache Kafka

## EXPERIENCE

### Federal Reserve Bank

New York, NY

Technical Architect · May 2017 to Feb. 2020

Architected and built rest based micro-services from ground up. The rest services department accepted and managed bids for auctions worth billions of dollars.

- Implemented a home-grown distributed tracing system using MDC to trace user request spanning multiple rest services. The performance and diagnostic metrics aided in troubleshooting application problems.
- Used Server side sent events (SSE) to publish bid awards stream to the front end gui application. Provided real time updates of the bidding outcome to all the users.
- Used Mulesoft based workflows to serve as api gateway and reverse proxy and also handle user authorization. It helped secure and load balance the user traffic
- Prepared Git based version control workflow and coached colleagues on proper usage
- Tuned performance of the application including Hibernate queries to meet the 200 milliseconds SLA for user response time

### Barclays Capital

NYC

Senior Software Engineer · Feb. 2011 to Apr. 2017

Architected and built distributed Apache Ignite caches of Bank Reference data. The caches were localized to different regions using Solace MQ, allowing faster access of data to the clients.

- Implemented Spring Cloud based Micro-services solution for accessing reference data in order to provide robust and reliable access to the applications
- Setup Team city automated builds that enabled continuous build and automatic deployment of applications resulting in improved efficiency within the Production Support Team
- Implemented a Solace MQ based messaging system to distribute Reference Data to downstream clients. Software As Service (SAS) simplified client on-boarding, resulting in increase in number of downstream clients
- Built Angularjs based front end application to display Product Taxonomy
- Designed and implemented an Application Health Monitoring system to centralize monitoring of the various Reference Data Hubs; the system alerts helped reduce downtime of the application and prevent some production issues
- Used Big Data Solutions like Elastic Search (ELK stack) for analyzing and visualizing the application monitoring metrics data; the charts provided key insights to management regarding application usage by clients and the stability of the system

### UBS Investment Bank

Jersey City, NJ

Risk Analytics Developer · Jan. 2010 to Dec. 2010

Developed an Incremental Risk Charge application to reduce the amount of capital reserves for extreme business events

- Used Java multi threading to reduce the job execution time by three hours
- Leveraged Spring Batch flow to allow jobs to resume from point of failure. Improved application turnaround time in case of job failures