Sarvesh Ranjan

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Education

Dual Degree Bachelors in Computer Science and Engineering with Masters in Information Technology — July 2010 — Present

Indian Institute of Technology Roorkee

Work experience

Cisco Systems — Aug 2015 — Present

Engineering Consultant

Working remotely with OpenStack team in Cisco, San Jose. Current project focusses on creating advanced data science and monitoring services on top of Cisco Zeus. This project involves devising methods for system health checks, monitoring, creating policy based alarms, and data backup systems for failure prevention. This project also involves creating load balanced data storage mechanism for multiple site data center scenarios and aims to perform locality based data replication using erasure codes.

Cisco Systems, San Jose — Aug 2014 — Jul 2015

Cisco International Internship Program Intern

Worked with OpenStack team under Office of Cloud, CVG for one year in San Jose. Worked on projects in the fields of OpenStack, Machine Learning, NLP and contributed to upstream code of open source projects like Apache Kafka & Storm. Currently an active contributor in Ceilometer andCinder projects in OpenStack. Worked on following projects:

- Multi dimensional anomaly detection and disk failure prediction.
- Read and write optimization in Ceph object storage system.
- PlaceWise: A smart (multi-) cloud resource placement recommendation engine and service.
- Cognitive: Machine learning as a service.
- Authentication and security in Apache Kafka pub-sub system.
- Multi node OpenStack cluster deployment and management.
- Designing Elasticsearch, Kibana and Logstash based logs & metrics pipeline and performing policy based cloud monitoring.

Integral part of the team which created Software as a service Cisco product called Cisco Zeus. Participated in OpenStack summit in Vancouver as a speaker and presented work about Demystifying Logs in OpenStack Clouds.

IBM India Research Lab — Feb 2014 — May 2014

Research Intern

Worked with Watson team to derive algorithm and variables for Job Data Normalization from unstructured job descriptions to find similar jobs and draw insights using Natural Language Processing (NLP).

Wipro Technologies — May 2014 — Jul 2014

Summer Intern

This project's aim was to create Erasure codes and improve the performance of data replication and storage methods used by Microsoft Azure. Used Reed-Solomon codes & erasures and decreased the amount of replication needed to

create a multi level, multi-tier, scalable block object storage system.

Impetus Infotech India Pvt. Ltd. May 2013 — Jul 2013

Summer Intern

This project's aim was to devise an algorithm for scheduling hadoop jobs in MapReduce frameworks. The algorithm focused on rescheduling hadoop jobs using code realignment and created DAGs to reschedule the SQL like queries. This algorithm was then implemented in the profiler of Jumbune(TM), product of Impetus Technologies, Inc. This was later used to create task executor.

Projects

· **Cisco Internal Webex Social Recommendation System (Webex++)**

A social platform with functionality of Q&A was created. WebEx++ is a continually improving knowledge base of posts, questions and answers created, edited and organized by everyone who uses it. Equipped with the advanced techniques of Machine Learning and NLP, it is a platform that enables Cisco employees to share their knowledge, questions, ideas and expertise.

· **Database driven application about the eating joints**

A database driven application was built that stores information about the eating joints (canteens, cafeterias, restaurants etc.) in and around the college campus. Aim was to provide a portal for students to discover new places to eat. System also provided the capability for querying and displaying a list of restaurants ranked according to user-defined criteria.

· **Demystifying logs in OpenStack clouds**

OpenStack services create a big jungle of logs and metrics and provide a cloud operator tremendous insights. As part of this project Cisco proprietary systems were created that answer questions like:
(1)What are the most interesting and actionable logs out of the many terabytes admins see?
(2) Are there metrics whose changes correlate with certain logs?
(3) Are there certain errors that cascade from one service to another? How does one get to the root cause of issues?
(4) What are the typical parameters associated with common event pairs (average time between occurrence, association rules, and preceding and successive events)?
(5) Are there logs that are early warning signals for potential operational issues? A Django driven application was created which found the logs which were indicators of faults &created visualizations for ease of cluster management. A Cisco patent has been filed on this innovation.

· **Brand-specific Social Score: Identifying Brand supporters & detractors through Social Media**

The project involved collecting and analyzing social media data using techniques of data mining and machine learning to provide actionable intelligence to marketers. A web application was developed to demonstrate the process and visualize the results.

· **Building alarming and evacuation system using sensors**

This project focused on devising a novel algorithm for emergency evacuation system using Cisco CMX sensors and mobile devices. This method found safest unobstructed path for evacuation.

· **Implementation of an assembler for a SIC/XE machine**

This is the design of a basic Assembler coded in C++. The program was designed to read a file containing SIC or SIC/XE programs. It was designed to compile the code and generate the Symbol Table, Machine Code, Object Code, Argument Table and Definition Table.

· **Web Server Selection**

This project was based on the design of a mathematical model for web service recommendation system for users based on the concepts of artificial intelligence. A mathematical formula was created to automate the process of load balancing & server selection.

Achievements

- Won HackIT V- Data science hackathon in San Jose, CA.
- Certified Cisco Security Ninja White Belt Engineer.
- Winner FY15 Year-End Showcase Cisco International Internship Program
- Active Technical Contributor OpenStack (Ceilometer, Neutron,Cinder).
- Achieved position in top 0.1% in JEE-2010 among 1.2 Million candidates.

References

Dr. Debo Dutta
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Dr. Balasubramanian R.
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