

Gaurav Pande

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OBJECTIVE:

To contribute positively to the organization's goals through sincere hard work and effective application of my knowledge and skill, upholding highest possible business values. Would like to pursue a job which is creative, challenging, offers an open work culture, intellectual development and avenue for personal growth.

Education:

- **College of Technology, GBPUAT, Pantnagar**
B.Tech in Computer Engineering – 7.7/10 2010-2014
- **Maharishi Vidya Mandir, Almora**
CBSE(class 12th) - 88.6%(secured 95 % marks in PCM) 2009
CBSE(class 10th) - 90.2% 2007

Technical Skills:

- **Programming Language:** Core Java,C.
- **Scripting and Web Technologies:-** REST, XML,Markdown,Jekyll, Junit testing, Data Modelling language-YANG
- **Operating System:** –Unix(Solaris), Windows
- **Database:** MySQL
- **Networking:** Knowledge of TCP/IP, SDN(Software Defined Networking), NSO, Openflow Architecture, OpenDayLight architecture, Telemetry, Elastic Search.
- **Protocols and Frameworks :** NETCONF, RESTCONF.
- **Web/Application Servers :** Apache Tomcat, karaf, Apache OSGI
- **IDE :** Eclipse, Basics of Eclipse CHE, Codeblocks.
- **Version Control :** Git, Jenkins, Gerrit (Source code control),Bugzilla (Defect tracking).
- **Other Tools :** Virtual Box, Maven, Mininet, OpenVswitch,Openwrt,Kafka, Spark.

Experience Summary :

I am currently a Software Developer in Cisco India. Before that I was engaged in the Research & Development wing of Tata Consultancy Services. I have worked primarily in Telecom domain.

- Worked on a OpenflowPlugin to support OpenFlow features in an Software Define Network.
- Worked in elastic search, predictive analysis in Software Define Networking.
- Worked in developing an MDSAL project CARDINAL-OpenDaylight monitoring as a service from scratch.
- Experience in OpenDaylight (SDN Controller) and REST APIs.
- Experience in various OpenDaylight components i.e. Openflow Plugin, Centinel, Cardinal, NEMO,Kafka,Spark.
- Experience in technologies like JavaScript, HTML, CSS, Java, Junit testing.
- Certified in Brocade Certified Virtual Router Engineer.
- Contributed 10k+ lines of code in the OpenDayLight community.([Link](#))
- Experience in various Data analytics platforms like pipeline, prometheus, grafana.

Career Profile :

Title	Telemetry in Software Define Networking(CISCO)
Period	June-2016- current.
Position	Software Developer
Responsibilities	<p>Accomplished the following activities:</p> <ul style="list-style-type: none">• Understanding the core concepts of telemetry,predictive analysis in IOS-XR devices.• Understanding of tools like pipeline, Kibana, prometheus, and time series data repository.• Developing tools to generate the python bindings/apis from yang modules to make the networking programmable.• Create Applications based on generated apis, like generating alerts when a BNG(Broadband Network Gateway) exhaust the Ip pool usage and apply some actionable intelligence based on those alerts.• Use the apache spark Machine library to investigate the openflow stats and predict the interface bandwidth using the same(link)

Title	Netconf/Jenkins/Openaylight
Period	May -2016 to June-2016.
Client	Nokia
Position	Lead Developer
Responsibilities	<p>Accomplished the following activities:</p> <ul style="list-style-type: none">• Write jenkins jobs for continous integration.• Netconf switch discovery using opendaylight controller.• Designing overall architecture of single sign on with Eclipse CHE which is connected through jenkins, opendaylight.• Running opendaylight inside a container.• Automating the jenkins with opendaylight using java

Title	lotdm/RespberryPi
Period	April-2016
Client	TCS
Position	Lead Developer
Discription:	In real world scenario where the smart cameras will be deployed, if due to some mishappening a fire occurs than this use case shows that how all the resources can be provided to a single respberryPi thermal sensor which will provide all the relevant data to the lotdm data store and from there using the thresold analysis a alarm can be triggered.
Responsibilities	Accomplished the following activities: <ul style="list-style-type: none"> • Configured RespberryPi. • Created the Use case UI in which user can see the alarm being triggered. • Integrated the lotdm southbound plugin of Opendaylight with our functionality. • Wrote java code to provide the logic of the full use case.

Title	CARDINAL-OpenDayLight Monitoring as a Services
Period	MARCH-2016 to Present.
Client	OpenDaylight Community
Position	Lead Developer / Project Owner
Responsibilities	Accomplished the following activities: <ul style="list-style-type: none"> • Requirement gathering and analysis • Preparation of Project Proposal. • Preparing the detailed design for the required tools and propose to client. • Planning and effort estimation • Coding/Implementation • Unit, Integration and Junit testing. • Code commiter activities on gerrit and integration activities of project on Jenkins.
Lines Of Code	10k+
Project Link	Cardinal

Project Description: Cardinal (OpenDaylight Monitoring as a Service) enables SDN Controller - OpenDaylight (ODL) and the underlying software defined network to be remotely monitored by deployed Network Management Systems (NMS) or Analytics suite. In the Boron release, Cardinal will add:

- OpenDaylight MIB.
- Enable ODL diagnostics/monitoring to be exposed across SNMP (v2c, v3) and REST north-bound.
- Extend ODL System health, Karaf parameter and feature info, ODL plugin scalability and network parameters and Support autonomous notifications (SNMP Traps).
- Jointly identify, discuss/review and finalize the data modelling and (REST APIs) for different features.
- Design the data model in yang and provided APIs for the features.
- Implement using Java the feature to enable the interworking of end-to-end ecosystem.
- Ensuring code quality and compliance as per SDN/OpenDaylight-(SONAR).
- Code submission and integration to SDN/OpenDaylight-Centinell code base (GERRIT).
- Follow through on submitted resolution and ensure no-break builds (JENKINS).

Title OpenDayLight-NEMO (Inent Based Networking Model)
Use case Implementation-Bandwidth On Demand

Period January-2016 to March-2016

Client Name NextGen R&D – TCS Internal

Domain Telecommunications

Role Developer

Project NEMO is an Network Intent modelling language just like SQL. It provides NBI in the form of language, similar as SQL, which could be embedded in applications. It is a DSL for the abstraction of network models and operations. The proposed NBI language is capable of describing most scenarios in wide area networks (WAN), enterprise networks, and data center networks. As a part of this POC I implemented a important usecase of NEMO-Bandwidth on Demand to demonstrate the concept of Intent Base Networking.

Responsibilities Accomplished the following activities:

- Created Intents for adding rules on the virtual networks.
- Compared NIC(Network Intent Composition) and Nemo capabilities.
- Virtual environment setup.
- Provide end to end poc to demonstrate the concept of network intents.

Title OpenDayLight Contribution (OpenFlowPlugin in Beryllium release)

Period August 2015 to December 2015

Client Name NextGen R&D – TCS Internal

Domain Telecommunications

Role	Developer
Project Description	As part of this assignment the aim was to contribute for the enabling Openflow specification 1.4 features Eviction and vacancy in OpenFlowPlugin (Southbound plugin to Opendaylight).
Responsibilities	Accomplished following activities: <ul style="list-style-type: none"> • Quick ramp up on understanding OpenFlowPlugin. • Analysis of functional requirements and Design to produce the expected output to support Eviction and vacancy events of OpenFlow 1.4 features. • Provide end to end design for both the features. • Code to support the features as an extension of OpenFlow Specification 1.4

Title **Service Sentinel - TCS Mobile NFV management.**

Period February 2015 to july 2015

Client NextGen R&D – TCS Internal

Position Developer

Project Description Tata Consultancy Services Mobile NFV Management Framework helps users easily track, operate (scale and migrate), and collaborate on OpenStack or Red Hat Enterprise Linux OpenStack Platform, while ensuring security. It includes use cases that can guide critical operations management on the go.

Responsibilities Accomplished following activities:

- Desing a android application for the Mobile NFV Framework.
- Supported various wireframes using android.
- Provided full support of User Interface and android java coding.

Title **OpenDayLight-SDN with Wifi**

Period November 2014 to january 2014

Client Name NextGen R&D- TCS Internal

Position Developer

Project Description As a part of this assignment I demonstrated how SDN can work in a WIFI environment by supporting a OpenFlow extension at the router level which can receive the openflow packets coming from the SDN controller and forward to the next node. Opendaylight controller was used and openwrt framework of router is used to implement it end to end.

Responsibilities	Accomplished following activities: <ul style="list-style-type: none"> • Created a virtual environment with the help of mininet and Opendaylight. • Installed the Openflow plugin extension in Openwrt framework. • Installed the Openwrt image at router(NetGear router) to support OpenFlow. • Showcased end to end packet flow from mininet node to SDN controller to router using SDN with wifi.
Title	Railways Management System
Period	September 2014 to November 2014
Client Name	Tata Consultancy Services- ILP
Position	Team Lead/ Developer
Project Description	Online Railway Management system was an application built on MAINFRAMES to handle similar functionalities as Indian Railways website do. User can Register, book a ticket, cancel a ticket and can view the history of tickets along with the implementation of the tatkal booking system.
Responsibilities	Accomplished following activities: <ul style="list-style-type: none"> • Requirement gathering and analysis. • Onboarding of the team along with effort distribution. • Preparing sequence diagrams and use case diagrams. • Implemented functionalities. • Implemented captchas as a part of MAINFRAMES in innovation competition and also won first prize. • Rated 5 out of 5 in ILP(Initial Learning Program)

Projects & Trainings Undertaken in College:

- **Name:** **PAREEKSHA- Android Application**
- **Duration:** 4 months (Approx.) in 8th Semester
- **Platform:** Java,Android,MYSQL
- **Description:** As a part of final year project phase, I with my two other colleagues developed an Android application- "PAREEKSHA", a short quiz organizing application, which aims to solve the challenges faced by teachers during their class hours. This application assists teachers to take short quiz randomly during lectures and share important assignments through the same. The key features of the application are:
 - The application provides login support for teachers and students.
 - The teacher can set up the question paper while students can give a test, submit and view the paper.
 - Web connectivity secures the presence of the application on the internet which makes it accessible widely. Wi-fi connectivity to the Android application is made available using dedicated local server connected through a virtual router.
 - In addition to the App Development, I was responsible for organizing and distributing work amongst the other developers.

- Name: **Network Management:**

- Duration: 2 months

- Description:

- Certified in “**Network Management**” in 2012 from “**Nettech pvt ltd**”. Successfully completed a project for setting up a send mail server using prior learning of ipv4 addressing, routing, routing algorithms, Linux networking, Telnet configuration, ftp, firewall & Iptables, DNS, DHCP and Samba configuration.
- I was among top 15 students from total 200 students.

Extra Curricular Activities:

- Participated in National Debate in YUVA'13 at Govind Ballabh Pant University Of Agriculture and Technology.
- Won First prize in University level Debate in **DHAROHAR'13**, organized by Spic Macay, Pantnagar Chapter.
- Member of **Vivekanand Swadhyay Mandal** (University level society) which inculcates the spirit of leadership and team-work and follows the ideologies of one of the revered monks of India, Swami Vivekananda.
- I got ample opportunities to organize some successful events such as "Leadership hunt", "One minute speech competition", "Personality development workshop" and was an inevitable part of the organizing team of "National Youth Conference-2014" on "Social Entrepreneurship".
- Member of organizing team of **International Youth Conference'12**.
- Presented Paper at **International Youth Conference'13** in “**EDUCATION FOR MAN-MAKING**”.
- I have also actively participated in the weekly "Sunday classes" inclined to help the underprivileged children residing inside our campus by mentoring them in their studies.
- As an hobby I experiment with my own personal website. Also seeking interest in metaphysics, I also write blogs (Tenets of My Life).

Strengths:

- Professional Programming Skills and experience.
- Expert in working with various operating systems.
- Fast Learner.
- Excellent interpersonal & communication skills.
- Pleasing personality.
- Creative mind set.
- Self-confidence and enthusiasm.

Personal Information:

Date of birth : 28-june-1992

Hobbies : Solving Rubiks cube, experimenting with my personal website, writing blogs.

Marital status : Single

Current Location : Bengaluru

Designation : Software Developer

Links:

Personal Website : <http://www.gauravpande.in>

Github : <https://github.com/gaurav-pande>

Linkedin : <https://www.linkedin.com/in/gaurav-pande-b013104a>