

## ROSISH SHAKYA

Austin, TX; E-mail: [shakya.rosish@gmail.com](mailto:shakya.rosish@gmail.com)

### PROFESSIONAL EXPERIENCE:

**Senior Software Development Engineer**, May 2015 to Current

**Dell Inc.**, Austin, TX

- Design and development of cloud solutions and frameworks to support Dell's **Software Defined Storage**
- Created **REST APIs** in Java to check software/firmware compatibility on Dell hardware and upgrade system

**Software Engineer**, July 2011 to May 2015

**AT&T WIFI** (Contractor), Austin, TX

@Infosys (September, 2014 - current)

@Customer Care Inc. (July, 2011 - September, 2014)

- **Object Oriented** software development in **Agile Environment** using **Java**, **C++** and **Python** in Linux platform for **AT&T** and **AT&T WIFI** domain
- Developed and deployed web-based applications on Enterprise Application Servers like **Tomcat**, **Jetty**, **Glassfish** and **Django**
- Worked with **Struts** to create different **JSP** pages and Action classes with **MVC** design pattern
- Built various **SOA** layers using **SOAP**, **REST** and **XMLRPC** to integrate applications across different domains
- Developed a real time distributed **Big Data Transport solution** using **Apache Storm**, **Kafka**, **Zookeeper** and **Netty** in **Java** on top of **Spring framework** to capture and transport LTE data at peak rates of 14Gb/s
- Developed a Big Data Monitoring solution using **Ganglia**, **Statsd**, **JMXTrans**, **Yammer**, **IMetrics** and **Google Protocol Buffers** to monitor, configure and run analytics on a 30000 node system
- Involved in architecture, design and implementation of various high performance network software simulation engines for performance testing of AT&T networking hardware. From the analysis done using these tools, AT&T WIFI was able to improve their device performance by almost **200%**
- Designed and deployed software based on various network protocol simulations (**DHCP**, **SNMP**, **BGP**, etc.) and data serialization and compression techniques (e.g. **LZF**, **Snappy**, **Deflater**, **GZIP**, **Google Protocol Buffer**, **MessagePack**, **XML**, **ZeroMQ**, etc.)
- Developed Data Access Object (**DAO**) pattern in persistence layer using **JDBC**
- Worked with **PostgreSQL** database on edge devices and **Oracle** database on the central servers
- Designed, built and troubleshooted various networking architectures on virtualization platforms like **Amazon EC2**, **VMware Workstation** and **VMware ESXi**
- Prototyped WIFI Service Infrastructure using multiple virtual machines and developed mocked version of various server elements to analyze working and performance of a real system
- Worked extensively on various core networking technologies like **VLAN**, **tunneling (GRE/L2TP)**, **tc rules**, **eatables**, **iptables**, **bridges**, **SNAT**, **DNAT**, **NETMAP**, **SCP**, **SFTP**, etc. for building applications around these tools
- Utilized **Jenkins** server to create and maintain the build and execution of software projects
- Involved in **Unit (PyUnit, JUnit)**, **Functional**, **Integration**, **Regression** and **Performance testing**
- Designed and developed **test automation frameworks** using **Jenkins**, **Robot Framework** and **Selenium**

**Software Developer**, Apr. 2007- Jul. 2009

**MAXTECH Study and Services (Pvt.) Ltd.**, Nepal

- Supported full software development life cycle (**SDLC**)
- Generated requirement and functional documents including **Use-Case Diagrams**, **Class Diagrams** and **Sequence Diagrams**
- Involved in **OOP**, **Event programming**, and **Multi-threaded programming**
- Utilized diverse tools and technology including **Java**, **C**, **C++**, **PHP**, **JavaScript**, **MySQL**
- Worked on web development and development of various desktop applications
- Worked on projects regarding embedded system design based on **8051** microcontroller

**Graduate Research/Teaching Assistant**, Aug. 2009-May. 2011

**Networking Research Laboratory**, Department of Electrical and Computer Engineering, University of Akron

- Developed simulation models using C++ with **OMNeT++** discrete event simulation library for a **research project** in multimedia networking regarding determination of optimal placement of video caching routers for reducing the average retransmission delay of video traffic in a given network.
- Involved in developing a **Java network application** for achieving reliable data communication between PC and an **industrial serial arm robot** (KUKA 5-sixxx R650) for spine biomechanical testing using **TCP socket**.
- Developed Optical Power Budget Analysis tool for Ethernet Passive Optical Network (**EPON**) using **Java** that involved building the PON architecture and determining the optical power levels received at OLT from each ONU.

#### **TECHNICAL SKILLS:**

##### **Technologies:**

C, C++, Java, J2EE, Python, Spring, Struts, Tomcat, Jetty, Glassfish, Jersey, JSP, JDBC, Javascript, HTML5, JUnit, Big Data (Kafka, Storm, Trident, Hadoop, Splunk, Cassandra, Redis, Netcat, Kafkacat, Ganglia, Zookeeper, Nimbus, Supervisor), MATLAB, R, Mathcad, Verilog, VHDL, assembly (8051, MIPs), UNIX programming

##### **Database:**

Oracle, PostgreSQL, MySQL, MSSQL, SQLite

##### **Tools :**

Java IDEs (Eclipse, Netbeans, JCreator, JBuilder), MS Visual Studio 2005/2008, UML tools (UMLet, ArgoUML, Microsoft Visio), Robot Framework, Selenium, Maven, Subversion tool (TortoiseSVN), Discrete Event Network Simulation tools (OMNeT++, CSIM), Documentation tools (Microsoft package, Latex)

##### **Operating System:**

MS Windows, Unix (Debian, RedHat, Fedora, Ubuntu)

#### **EDUCATION:**

**Masters of Science in Electrical & Computer Engineering** (GPA: 3.9/4), University of Akron, OH (May. 2011)

- Master's Thesis: **Optimal Caching Router Placement for Reduction in Retransmission Delay**. The work focuses on the formulation of mathematical program and derivation of a dynamic programming solution to minimize the average retransmission delay using video caching routers. The results obtained from the dynamic programming solution are then validated via experimental exhaustive enumeration done in simulated environment using C++ and **OMNeT++** discrete simulation tool.

**Bachelor in Electronics & Communication Engineering** (Distinction Division), Tribhuvan University, Nepal (Feb. 2007)

- Senior Design Project: **Wireless Remote Water Level Monitoring System using Ultrasound**. The project is based on monitoring and controlling of surface level of water sources (rivers, dams, etc.) from remote Central office in a real time basis.

#### **HONORS & ACADEMIC ACHIEVEMENTS:**

- Certificate of appreciation for the active participation as working member of **Robotic Committee** of the college for the preparation of robot during **Robo Soccer** (first national machine design competition in Nepal), 23rd Jul. 2004 which achieved the "**Best Idea Award**"
- "**Best Student Performance**" (2003 & 2004), Advanced College of Engineering & Management, TU

#### **PUBLICATIONS:**

- Michael P. McGarry, Rosish Shakya, Mesrob I. Ohannessian, and Rony Ferzli. Optimal Caching Router Placement for Reduction in Retransmission Delay. IEEE International Conference on Computer, Communications and Networks (ICCCN 2011)