**Curriculum Virtue of Debojyoti Roy**

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# Experience

## Ixia, Keysight Business (<https://www.ixiacom.com/>)

1. AresOne-400GE (<https://www.ixiacom.com/products/aresone-400ge>), March-2018 – Present.
   * My responsibility was to reuse same software (SW) component, what I build in 400GE Load-module, in this project and maintained the quality as it was in 400GE.
   * Created a new service, whose responsibility was to follow necessary steps to prepare all available HWs for use. It helped to download correct image to correct hardware (HW) and established connection between different HW components. Without this SW component, ports could not operate. This component was written in C++ language. This service is currently used by all recent and upcoming cards.
2. 400GE Load-modules (<https://www.ixiacom.com/products/400ge-qsfp-dd-and-cfp8-load-modules>), March-2017 – February-2018
   * My responsibility was to build software component for transmitting stateless packets and maintain user’s configured-rate. Here, new HW structure was introduced. As a result, SW had to come up with new suitable-algorithm to configure new HW. SW component would communicate with transmit HW and configured it to maintain desired traffic-rate. It validated the configuration, converted the configuration to HW suitable format and wrote that to HW. Without this component, no packets would be transmitted. This component was written in C++ language. To accomplish the goal, I had to use some STLs, like – dequeue, vector, map.
     1. Product name – IxOS
        + Features’ name –
          1. Advance Packet Stream: concurrently transmit different classes of packets.
          2. Sequential Packet Stream: transmit different categories of packets one after another.
     2. From SW side I own this area, i.e to maintain line-rates of transmitted packets. So, if any traffic’s line-rate related issue comes, from SW side I look into the issue first and decide whether that issue required HW-team’s attention or not.
   * One smaller component I developed, which was responsible to configure packets’ content. It also related to configuring HW appropriately. If this configuration was incorrect, data inside the packets would be impacted.
3. Novus 100GE (<https://www.ixiacom.com/products/novus-qsfp28-10050402510ge-load-modules>), November-2016 – March-2017.
   * My responsibility was to fix issues of software component, which was in charge for transmitting stateless packets and sustained configured-line-rate.
4. OSPF in IxNetwork (<https://www.ixiacom.com/products/ixnetwork>), August-2015 – November-2016.
   * I developed frontend and middleware portion of Segment Routing feature for OSPF protocol. Eventually I enhance OSPF protocol state-machine for this feature. As I did that, I also started looking OSPFv3 state-machine related enhancements. Whenever new feature came, I had to incorporate new logics in packet decoder as well.

C#(vs2012) language was used when project was associated with frontend. On the other hand, middleware was written using C# and C++. In case of protocol state-machine, language C++ was used.

1. Testing protocols in IxANVL (<https://www.ixiacom.com/products/ixanvl>) November-2011 – July-2015
   * My responsibility was to design conformance-tests, which fed to IxANVL and it would test whether a device was compliant with well-known standards (RFCs). In that case, I had to read RFCs thoroughly. After that I had to identify important statements, which were mandatory for a device to support for that RFC. And proposed some suitable steps, following those steps one could say that a device confirmed that statement or not.
     1. A few protocols where I involved – BGP, PIM-SM, IP, IPv6, IGMP, MLD, ARP, OpenFlow (very basic functionalities)

# Technical Skills

* Programming language: C++, C# - VS2012 – very basic, Python – very basic, TCL – very basic
* Version Control: Perforce, GitHub
* Protocols (basic knowledge) – ARP, IPv4, ICMP, IGMP, PIM-SM, BGP, IPv6, NDP, MLD, ICMPv6

# Non-technical Skills

1. Work with teams, located at different locations
2. Collaborate with different team members to achieve single task
3. Basic proficiency in Microsoft-tools like – power-point, excel, word
4. Basic proficiency in packet decoder like – Wireshark
5. Familiar OS: Windows, Linux (Ubuntu, CentOS)
6. Languages: Fluent in English and Bengali. Understand Hindi.
7. Taught data structure and algorithms to some undergraduate students

# Awards

1. Acknowledged as Key Contributor (among top 20% of my level) for last 6 months of 2019.
2. Since my joining, I participated in 3 Hackathons (2012, 2018 and 2019). Amongst more than 100 of ideas, my ideas got selected 3 times.
   1. In 2018 my idea secured 1st runner up position in our country.
3. Received Spot award for a quarter, when team size was 8, at the time of developing 400GE Load-modules.
4. Received Spot award for a quarter, when team size was 12, at the time of developing OSPF Segment Routing.
5. Received Spot award twice for two quarters, when team size was 12, at the time of protocol testing.

# Education

1. Ramakrishna Mission Vivekananda Educational and Research Institute, Howrah, WB, India, 2009-2011 (<http://cs.rkmvu.ac.in/>)
   1. MSc in Computer Science, Secured 8.2 CGPA.
2. University of Calcutta, Kolkata, WB, India, 2006-2009 (<http://www.caluniv.ac.in/>):
   1. BSc (Honours) In Computer Science. Secured 65% marks in Honours subject.

# Projects

## Graduate

1. Planarity Testing Algorithm by Hopcroft & Tarjan (2nd Semester and Programming Project in C++)
2. Design & Implementation of Relational Database (3rd Semester and Course Project in C++)
3. Networked Supertuxkart (Final Year Project): Addition of some features in a multiplayer LAN game.

## Under-Graduate

1. Sutherland-Hodgeman Algorithm for Polygon Clipping (Final Year Project in C language).

# Hobbies

1. Playing indoor and outdoor games. I love to play table-tennis, cricket, badminton.
2. Listening to Hindi and Bengali music and watching movies (English, Hindi, Bengali)
3. Love to travel.