**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 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 included download correct image to correct hardware, established connection with other HWs. HW team provided a How-to document. Depending on that document, I designed the service. Without this SW component, none of the ports can operate. This component was written in C++ language.
     1. This is an added responsibility. HW team members investigate the issue first. if they find any steps required to be changed, they informed new steps to my team. Accordingly, I incorporated their steps into the service.
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 configured-rate. Here, old HW structure was not used, as a result SW had to come up with new suitable-algorithm for this HW. SW component would communicate with transmit hardware and configured HW to maintain desired traffic-rate. It validated the configuration, converted the configuration to HW suitable format and pushed 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
        + Feature name – Advance Packet Stream
          1. A few important sub-features’ name – support different line-rates for multiple streams, update line-rate when transmission is going on.
     2. I own this area. 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 packet content. It also related to configuring HW appropriately. If this configuration was done incorrectly, statistics of 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 feed to IxANVL and it would test whether a device follows, what RCF said. In this 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, thorough 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

# Awards

1. Acknowledged as Key Contributor 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 Segment Routing feature development.
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.

# Other Skills

1. Microsoft-tools: power-point, excel, word
2. Packet decoder: Wireshark
3. Familiar OS: Windows, Linux (Ubuntu, CentOS)
4. Languages: Fluent in English and Bengali. Understand Hindi.
5. Taught data structure and algorithms to some undergraduate students

# 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.