Nishant Pattanaik

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SUMMARY OF QUALIFICATION:
More than 8 years of design and development experience in systems software, with strong emphasis on IP networks, real time, concurrent software and Linux systems programming.

OBJECTIVE:
Pursuing a full time position in software development, in the field of computer data networks, operating systems or system software development.

EDUCATION:

Master of Computer Science, Texas A&M University.	GPA 3.8/4.00	**December, 2015**
Bachelor in Technology, Computer Science, Biju Pattanaik University, India.	GPA 9.07/10	**June, 2006**

PROFILE SKILLS

- C, C++ and design patterns, Python and shell scripting.
- Experience in Posix libraries for software development, Linux net link sockets.
- Software designing and prototyping experience of large scale software features.
- Expertise in TCP/IP, IPv6 and Layer2 / Layer3 protocols and system software development.
- Linux operating system,   Linux iptables, Linux systems programming, Chorus embedded OS.
- Experience in various L2/L3 protocols like IPv4,IPv6,ICMP,RIP,BGP,IGMP,SNMP,IP Diff Serv QoS,GTPu .
- Experience in signalling protocols for CAC like IPCS (ITU-T Q2631.1), 3GPP signalling protocol like ALCAP, SCTP (RFC 2960), BFD, Ethernet Service OAM, Ethernet Link OAM.
- Proficient in GitHub, SVN, rational clear case, GDB, Valgrind, Wireshark, Spirent, Ixia.
- Experienced in developing IP Security features and hand's on experience in protocols like Ikev2, Ikev1, ESP and CMP.

PROFESSIONAL EXPERIENCE:

Qualcomm Inc, Qualcomm CDMA Technologies   **February, 2016**
Senior Engineer (San Diego, CA)
- Design and optimize sensors framework.

Qualcomm Inc, Qualcomm CDMA Technologies   **May, 2015- August, 2015**
Interim Engineering Intern (San Diego, CA)
- Design and optimize sensors based algorithms on Qualcomm mobile chipsets.

Texas A&M University, Power Systems Automation Lab   **September, 2014- May,2015**
Graduate Research Assistant
- Demonstrated security vulnerabilities in Smart Grid Protocols.
- Simulated various power system protocols in OPNET Network Simulator
- Studied the effects of IP spoofing, DoS ,DDoS attacks on Smart Grid Protocols

Nokia Networks R&D, Bangalore, India
Software Specialist: **August, 2011-July, 2014**
- Software architect responsible for delivering designs of software features for mobile data networks.
- Lead a team of 7 developers and implemented the feature for multiple mobile network operators to share the same 4G mobile network resulting in huge cost savings for major customers for Nokia.
- Implemented a web based utility on 4G mobile networks, to provide the ability to customers of Nokia to decrypt secured IP traffic on live mobile networks IP data backbone. **The idea was made as a disclosure for patent filing.**
- Implemented the feature to provide mobile network operators with the ability to analyse user mobile data on the IP backbone, offline using Wireshark for better network analysis and optimisation. **The implementation was filed as a patent disclosure with the Nokia Patent Office.**
- Showcased a prototype for **dynamic bandwidth allocation on an Ethernet link between Juniper based routers and Nokia 4G equipment.**
- Owned the **ICMPv6** module for the **IPv6** support.
- Demonstrated Cavium CN68xx network processor simulation on Linux servers **resulting in $50,000 cost savings in the form of equipment training costs for developers.**

Infinera India Limited, Bangalore, India
Senior Software Engineer: **May, 2011-July, 2011**
- Worked on the management layer of optical (OC-12/0C-192) protocols which involved object modelling, alarm handling, and fault notification on OTN products.

Technical Lead: Wipro Technologies, Bangalore, India   **August, 2010- February, 2011**
Client: Nokia Siemens Networks Project: Flexi Transport Module
- Implemented the proprietary URP (Unit Registration Protocol) on top of TCP/IP.
- Owned and delivered keep-alive messages module on top of TCP/IP.
- Prototyped an in-house POSIX thread pool based memory management module to replace legacy designs.
- Proposed and show-cased a Linux timer library to handle control plane protocol messages.

Technical Lead: Wipro Technologies, Bangalore Development Centre, India   **October, 2006- February, 2010**
Client: Nokia Siemens Networks
- Owned and Delivered ALCAP and IPCS signalling protocol modules.
- Worked on CAC on ALCAP, dynamic call setup of both IP and ATM calls simultaneously on the hybrid Iub interface.
- Worked on the IPCS signalling protocol on the IP interface. It was a proprietary protocol providing control plane functionalities over SCTP/IP for creating HSDPA and HSUPA calls.
- Implemented L1 protocols like PDH, SDH, and SONET.
- Designed and implemented IMA (Inverse Multiplexing of ATM) Protocol from RFC.
- Optimized control plane protocol stacks for memory and run times.
- Worked on edge to edge ATM Pseudo wire protocol (PWE3).

SELECTED ACADEMIC PROJECTS
- Implemented Trivial File Transfer Protocol (TFTP) server based on IETF RFC 1350 and a Proxy Server with LRU based cache on HTTP RFC-1945 specification
- Analysis of run times of Maximum Flow Graph Algorithms.
- Efficient decryption of Ikev2 IKE_AUTH messages in an IP Sec architecture (RFC2401).
- Bloom filter based predictive cache mechanism to improve the average cache access time,

AWARDS AND ACCOMPLISHMENTS:
- Award for innovation at Nokia Networks for leading a team to demonstrate network processor simulation prototype on Linux.(2013)
- Award for leading a team and delivering the best quality software in a software release cycle at Nokia Networks.(2013)
- "Feather in My Cap "award from Wipro Technologies for setting up of the lab for Nokia AXC project. (2007)
- "Feather in My Cap "award from Wipro Technologies for highest number of Bug Fixes.(2007)

PUBLICATIONS
- *"Implementing Attacks for Modbus/TCP Protocol in a Real-Time Cyber Physical System Test Bed"* **to 2015 Annual IEEE CQR International Workshop**
- *"Performance of Cooperative Firewalls in Real-World Deployments" in* **IEEE, Trustcom 2015, Helsinki, Finland.**

WORK AUTHORISATION:
- Eligible for full time work in U.S.A through OPT (Optional Practical Training).