Xinping Guo

Principal software engineer

Cary, NC - Email me on Indeed: indeed.com/r/Xinping-Guo/6547f750fe34923e

Principal software designer with twenty years of industrial experience specializing in software, firmware and DSP design and development for telecommunications.

WORK EXPERIENCE

Principal software engineer

Oracle America - 2013 to December 2013

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Working as a principal software engineer on LTE diameter signaling router and policy diameter route design and development. Contributed to new project planning, design, implementation, system integration.

Senior embedded Engineer

Ericsson Canada - Ottawa, ON - October 2002 to December 2013

Working as a senior designer and project prime on 4G LTE converged BTS platform, CDMA BTS software design and development. Contributed to new project initiative, project plan, high-level design and software development as well as software sustaining.

• Key designer for LTE product software development, developed LTE uplink and downlink physical layer, subband radio access, interface to accelerators for FFT/IFFT/DEC, L1TM, software to validate LTE ASIC for channel coding, optimization of DSP firmware, MAC/RRC to UPC/RAC. Initiated software design for new hardware platform and device drivers.

• Project prime for LTE demo and tech trial base software architecture and design. In charge of overall DSP software architecture and BTS base software, software design, and integration for multi-core DSP platform;

• In charge of 4G BTS GPS timing with SoC solution for GPS/PTP timing synchronization, holdover, recovery.

• Initiated and designed vxWorks system for multi-processors hardware platform for 1xEV-DO product; designed the software architecture and base software features; in charge of entire BSP, boot sequence and all drivers; implemented memory management, efficient decompression algorithm, timing and clocking services, file systems, network service, network routing; proposed software development platform design; coordinated with hardware and high-level application teams.

• In charge of CDMA BTS base software sustaining and quality improvement; designed new features for the existing products; solved several critical issues associated with software crash, software design, compiler and CPU errata.

Working as a key designer on Nortel VoIP product design and development. Contributed to SIP/Nortel UNISTim-driven VoIP softphone, 802.11b/g wireless VoIP handset and the element manager software for signaling server and call server access.

• Key designer for Nortel VoIP softphone, a leading softphone with various features including RTP/RTCP, USB driver, IP call recording, NAT traversal, audio codecs, local directory, TAPI interface as well as accessibility support.

• Initiated next generation VoIP softphone and wifi handset design

• Designed and developed VxWorks web server and Java-based web client to access and manage Succession 1K call server through signaling server.

• Technical prime for Nortel i2210/i2211 802.11b/g wireless handset design and development. Contributed to new features design for 802.11e QoS, Security, corporate/personal directory service support, and NAT traversal.

Working as a senior designer for high-capacity ATM core switch (Passport 15K) network processor and datapath with responsibility to design, implement, test, document and maintain firmware and ATM/MPLS/ SONET/SDH/IP protocol implementation in VxWorks to meet the project requirements. Contributed to ATM-MPLS gateway L2 switching and voice over ATM circuit emulation service projects for multiservice ATM switch (Passport 15K) and its transition to MPLS technology with selected achievements:

• Designed and developed highly efficient time-critical network packet DSP processor firmware for ATM cell and data packet processing. Contributed to multi-protocol conversions including ATM over MPLS, IP over POS, AAL5 SAR, PPP staging, PCI command engine and host-side VxWorks device driver. This project contributed to a contract from Cable&Wireless.

• As an integration prime, designed and developed embedded software for multi-service access high-density ATM circuit emulation service. Contributed to Nortel ASIC control and access programming for TDM-to-AAL1 conversion and device configuration via PCI, and protocol implementation.

• Designed and developed SONET/SDH telecombus serializer ASIC device driver for passport ATM switch OC3 line protection switching supporting APS. Received prize due to my achievement on voice over ATM gateway project.

• In charge of carrier grade issue for Passport 15K ATM switch synchronization between controller processor and functional processors (4pOC3, 1pOC12, 1pOC48). Intensively interacted with Hw/Sw engineering. Contributed to SUNI PLL algorithm optimization in ATM switch.

• Organized project meeting and presented technical report for each milestone. Wrote and submitted technical documents and weekly status reports in timely manner.

Senior Software Engineer

Unique Broadband Systems - Concord, CA - August 2000 to September 2002

Working as a team leader on several point-to-point and point-to multipoint wireless (microwave radio and cable modem) access projects to design software architecture and develop software for various software platforms.

• Initiated ucLinux and powerPCLinux from scratch into MC68360 and PPC860-based controller board.

• Designed and developed embedded Linux system to control UBS FPGA and implement IP over MPEG2 encapsulation and decapsulation, which include embedded Linux kernel programming, datapath, physical layer protocols and protocol conversion, interrupt and hardware access, DMA, and data frame analysis and manipulation in real-time mode.

• Designed and implemented VxWorks and Linux device drivers for Ethernet bridging, IP over MPEG2 encapsulation on digital video distribution system with embedded PowerPC860 and MC68360

• Developed embedded web server, SNMP proxy and CLI framework for IP Radio system, implemented embedded web server and network management system with SNMP to control and monitor radio, connection status and system performance on embedded system.

• Developed large-scale networking management using SNMP for point-to-point and point-to-multipoint wireless communication systems using Linux Nagios (Net-Saint) technology; Developed SNMP MIB, element manager and DHCP for point-to-multipoint wireless cable modem system.

Embedded Software Designer

Performance Technologies Ottawa - Ottawa, ON - May 1999 to July 2000

Worked as a project prime on firmware development for IP-SS7 signalling gateway product design and development with selected achievements:

• Headed and developed embedded IP-SS7 gateway firmware (on PowerPC860) for WAN server with implementation of SS7 MTP layer-1,2 and 3 and STREAMS socket network programming. Received a company anniversary award for my project achievement.

• Developed embedded software and device driver supporting hot-swappable functions for Lynx-OS-based SS7/IP gateway products.

• Designed and developed compact PCI device drivers and various PCI device configuration and access for VxWorks, LynxOs, embedded linux. These kernel device drivers are used for control processor to communicate with all PMC cards using PCI interface, PCI memory mapping, PCI line interruption and DMA. Involved in real-time operating system kernels and BSP programming as well as hot-swappable fault tolerant design as well as PCI bus debug.

Software Engineer

- 1996 to May 1999

As a software engineer and key team player for ISDN router and modem products, my responsibility was to design and develop various embedded device drivers and protocols including ISDN, TCP/IP, PPP, Ethernet, telephony modem, T1/E1, DSU/CSU and POTS:

• Designed and integrated ISDN, and IP routing stacks, embedded algorithms and software.
• In charge of debugging, interface and hardware access, ASIC control for various microprocessor-based ISDN-IP router products
• Performed system evaluation, performance simulation, product testing software and failure analysis
• Designed embedded application for X.25 migration to IP and always-on-server.

EDUCATION

Ph.D. of Computer Science in Computer Science

Leeds Metropolitan University - Leeds

M.Sc. of Electrical and Electronic Engineering in Electrical and Electronic Engineering

Peking University - 北京市

B.Sc. of Electrical and Electronic Engineering in Electrical and Electronic Engineering

Peking University - 北京市

ADDITIONAL INFORMATION

SKILLS

➢ Extensive experience on telecommunications including LTE, CDMA, WIFI, TCP/IP, VoIP, Diameter Signalling, SS7
➢ Hand-on experience with OSI model and various protocol stacks
➢ Proficient in C++, C, Object oriented design, SQL
➢ Performing complete software lifecycle with software initiative, architecture design, implementation, debugging, verification, integration, documentation, revision control, trouble shooting and sustaining.
➢ Strong leadership and influence on the project and cooperating effectively with hardware, software and system teams.
➢ Excellent written and verbal communication ability in English.