Philip Yang, Senior Embedded Software Engineer

31 Cougar Crt. Richmond Hill, ON L4S 1H7
Cell: (647) 918-0592 Email: yangxhui@hotmail.com

Highlights of qualification:

- Seventeen years SoC bring up, Linux bootloader, kernel, drivers, firmware and application development experience on embedded systems
- In-depth understand SoC architecture, hw and sw interface, IPC, application/driver/firmware interface, smp, memory, dma, cache, mmu, interrupt, security boot
- Expert in system performance benchmark, profiling and optimization
- Expert in troubleshooting, problem analyzes, debugging and root cause
- Expert in C/C++, ARM/x86/mips asm, Makefile, shell, python, cvs, hg, git, html
- Working knowledge of Audio/Video codecs, OpenGL, OpenCL, OpenMAX, OpenCV
- Quick learner, good communication and enthusiastic, reliable team player

Work Experience:

- **Senior staff embedded software engineer, Istuary MediaEngine Inc** (12/2016 – present)

Working on IP Camera chip project, SoC Linux cpu select, setup GPGPU to speedup encoder c-model simulation on PC Linux. Bring up ARM/64 Linux build environment for Xilinx FPGA. Study latest dtb implementation in uboot and Linux kernel drivers. openOCD for SoC debug through Jtag and USB. Study OpenCV for object, face detection to evaluate AI functions.

- **Driver team leader, ViXS Systems Inc. Toronto** (05/2007 – 12/2016)

Ported and developed uboot bootloader, Linux kernel and drivers to XC3 (ARC), XC4/5 (MIPS) and XC6 (ARM) series SoC chips, memory initialization, bootloader, kernel, drivers bring up, upgraded kernel version to meet customer's feature requirements. Bug fix, performance benchmark and optimize for Ethernet, SATA, USB, SPI flash, Nand flash, PCIe host and AV drivers. Led and implemented low-power feature and standby power management in kernel and drivers. Implemented communication mechanism between firmware and drivers in multi-core system. Designed and implemented fail-safe SoC system update feature. Optimized boot time to 2 seconds. Led and implemented SoC security boot.

Highlights of achievements: Design and implement zero-copy AV driver transcoding path to remove data copy between user, driver and firmware through mmap. Use reserved kernel memory space for driver DMA buffer to solve DMA buffer allocation failure duo to memory fragmentation. Optimize Ethernet driver with TSO and LRO to double TCP/IP performance.

- **Senior driver engineer, ViXS Systems Inc, Toronto** (05/2005 - 05/2007)

Bug fix and enhanced features of XCode PCI/e kernel mode AV driver on 32bit and 64bit Windows Vista, Ported driver to Linux and different customer host platforms, support little-endian and big-endian host platforms. Developed multi-thread sample applications.

Highlights of achievements: Implement driver platform independent structure by defining os related function and data structure interfaces.

- **Software engineer, ALT Software Inc. Toronto** (03/2005 - 05/2005)

Developed and ported serial, PCMCIA, Magstripe device drivers, created driver test applications for three different WinCE 4.2 Platforms on SH3, SH4 and x86.

- **Senior Software engineer, Star network Company, Fuzhou China** (03/1998 - 01/2005)

Worked on several Cable STB and network STB projects, responsible for WinCE, Linux kernel, drivers, build environment etc. Proprietary OS and GUI development, Browser layout algorithm development. Rewarded as distinguish software developer of company.

Education:

- Master of science in EE, Nanjing University of Science & Technology, China