Sanrio Alvares

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EXPERIENCE

May '20 – present **CLOUD SOFTWARE DEVELOPMENT ENGINEER (STAFF)** **Intel | Hillsboro, OR**

- Expertise in VMware ESXi Hypervisor, KVM/QEMU and Kernel development on Intel Server platforms
- Expertise in adding Intel TDX ISA support in VMware ESXi to boot VMs as hardware isolated TEEs
- Implemented TDX SEAMCALLs in host to create Trust Domain VMs and handle VM Exits
- Implemented VMware Hypercall in Linux Guest to enlighten Linux to run as a Trust Domain VM
- Implemented export/import SEAMCALLs to support Live Migration of Trust Domain VMs using vMotion
- Optimized runtime performance CPU, Memory by >20% by introducing Hugepages and Posted Interrupts
- Optimized async IO performance by introducing enhanced Interrupt virtualization resulting in 14% decrease in CPU Util
- Optimized PVSCSI lock contention by introducing multiple locks for request and completion queues
- Added support for User VMCALL in Open-vm-tools using prctl to abide by security hardening standards
- Collaborated with cross-functional teams to translate business requirements into robust virtualized solutions
- Provided technical support for Intel TDX architecture by interfacing between client and architecture teams

Apr '16 – May '20 **SYSTEM SOFTWARE DEVELOPMENT ENGINEER (SENIOR)** **Intel | Hillsboro, OR**

- Developed and validated USB4/Thunderbolt 3 features in Linux and Chrome
- Validated and fixed issues arising from customer board designs with Retimer that did not enter low power states
- Led client x86_64 SOC bring-up activities on Intel Reference Validation Platforms (RVP) for Chromebooks
- Reviewed customer board designs and provided feedback to ODMs that would affect Power and Performance KPIs
- Optimized suspend-resume time for Thunderbolt devices by implementing PCIe quirks
- Developed Peripheral IO HAL for Things Support Library; presented at Open IOT Summit and Global IOT Devfest

Jun '13 – Mar '16 **SENIOR SOFTWARE ENGINEER** **Qualcomm | San Diego, CA**

- Led Baseport for Snapdragon SOC (ARM) bring-up activities on Qualcomm RVP for Android Phones
- Fixed stability issues in core Linux Kernel that resulted in memory corruptions, DDR instabilities that manifested in panics
- Responsible for Pinctrl, Device Trees for Qualcomm SOCs
- Developed and maintained kernel debugging tools (KASan, Ramdump parsers, T32/Lauterbach scripts)

Feb '12 – May '13 **SOFTWARE ENGINEER** **Motorola Mobility | Plantation, FL**

- Backport Linux Drivers for Display, Touchpad, Headset for low end Android Phones

EDUCATION

BACHELOR'S DEGREE IN ELECTRONICS & TELECOMMUNICATION **Goa University, India**

SKILLS

- Proficient in C, Linux Internals, Device Drivers and Bootloaders (LK, Kernelflinger, Coreboot, U-boot, EFI), x86 Virtualization
- Fluent in languages like C++, Python, and Bash
- Proficient in Agile/Scrum methodologies, upstreaming code and tools like JIRA, Gerrit, Git
- Develop unit and functional testcases on frameworks like TAST, GoogleTest
- Thorough understanding of common hardware protocols like USB/USB4, PCIe, UART, SPI, I2C, SMBus, NAND, eMMC, NVMe, SPDM, IDE, TDISP
- Honed debugging skills covering HW & Low-Level SW – JTAG, ITP, GDB, DTF Trace, Saleae, Ellisys, Protocol Analysers, Logic Analyser
- Excellent Kernel Debugging skills, using KGDB, KDB, KASan, Memory Corruptions
- Excellent Debugging skills on virtualization platforms like VMware and KVM using tools like eBPF, vprobes, perf, sar, intel-mlc, fio, iperf, emon and similar
- Hands-on experience with containerization technologies like Docker, Kubernetes
- Excellent written and verbal communication skills with experience presenting complex technical information in a clear and concise manner to a variety of audiences
- Browse my work at github.com/spitfire88