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Summary

Can Code and Design from the ground up, in user and kernel land.
Can handle Systems build for storage, trading & finance.
Does BDD, reviews, architecture, system design, micro benchmarks, clean & readable code, low level performance measurements.

I am interested in, have experience in, have contributions into -

* Kernel Modules in NT and Linux. Systems Programming in POSIX and Win32.

* User Space Programming in C++, C++17, golang, bash, python, rust, scala

* Storage [Object, Block, Cloud]. Distributed [Memory, Transactions, Databases, Filesystems], CAP

* High Frequency Trading, Financial Markets, Numerical Methods, Low Latency, Ultra Low Latency

* ISCSI, NVME, RAID, SATA, FC, FCOE, SCSI, TCP/IP, S3, RAFT, PAXOS, FIX, Lustre FS, Async IO, block layer, nand, embedded systems, firmware

* ebpf, gdb, windbg, kgdb, git, open source, bpf, wireshark, iostat, fio, mdraid, perf

* CPU Caches, Muti Core, Cache Coherence, Multi threading, lockfree, shared memory, inter process communication

In Addition to the Software Development, I like teaching and training.

Experience

Software Engineer
Standard Chartered Bank
May 2019 - Jun 2020 (1 year 2 months)
Systems Programming, message routing queues in both H/W and S/W, Low level drill down on code path, C++ 17, C, Financial Markets, thread sync/async, kernel bypassing .

★ Lowered memory overhead by half, latency by an order of magnitude for numerical libraries. Demonstrated false sharing, not just speculation.
★ Being the first hire, was also responsible for logistics, training, travel, hiring, set up of end to end source flow, builds, tests, code guidelines, tests, layout.
★ Used modern C++ constructs, ebpf, 0 copy, tool chains, modular, maintainable; not

just syntax changes using new C++ constructs.
★ Challenging limits of multiprocessor synchronization, atomic,

Software Developer 2
Oracle
Jul 2015 - Dec 2018 (3 years 6 months)
Data Replication : Device Drivers in Linux Kernel from scratch, HLDs from scratch, LLDs from scratch, True async design from scratch, actual deep down scalability _in terms of I/O, memory, vCPU_ of modules (not just adding a caching/redirection/streaming tool)

★ Agile development, design and ownership, of the kernel module and of the user space app, in the LINUX BLOCK layer - On the data path/request queues.
★ Code from 0, with pre coding of unit tests, evaluate designs, design user space, code kernel mode components for replication across data center/ cloud instances, vm migrations, helped others for orchestration.
★ The component comes in the data path pipeline, and causes all other depending consumers to proceed asynchronously, while maintaining data integrity.
★ Multi threading in user space app, ioctls, file system operations, persistence.
★ BDD, and benchmark asynchronous (not glibc aio -now called io_uring-) I/O, comparison of I/O schedulers, scaling multi-threaded memory management.
★ Boot Up of drivers, udev, virtualization, micro benchmarking, threading and socket programming.
★ Mirroring agent using RAID and linear devices - Persistent metadata across reboots.

Senior Software Engineer
IGATE
May 2012 - Jun 2015 (3 years 2 months)
Protocol Development in Windows Kernel

★ SAN protocol for EMC2 – Windows driver ioctls to report throughput of FC, FCOE, ISCSI, SAS, and RAID. – catered to the requirements of the entire protocol team
★ Triage Tool Development
★ Analytics on unstructured log files generated by storage arrays; logs were used by support engineering teams to dispatch the defect tickets; results of the scripts were studied by teams designing the map reduce jobs; process to present failure class by sustenance teams got faster.
★ Softphone Software Adapters
★ Designed control for channeling requests between softphones (s) and headsets; Interaction between SF's SDK & Headset's HID interfaces need to be in resonance. The adapter made calling a seamless experience.

Education

Center For Development of Advanced Computing
Diploma in System Software Development, Computer Systems
2011 - 2012

Systems Programming, Linux Device Drivers, Network Programming, HPC, Parallel Computing, Win32, POSIX, Real Time Systems, Windows Device Drivers.

Uttar Pradesh Technical University
Bachelor's Degree, Computer Science and Engineering
2007 - 2011

Licenses & Certifications

The Data Scientist's Toolbox - Coursera

Data Lakes for Big Data - Dell EMC

Data Science Associate - Dell EMC

Parallel, Concurrent, and Distributed Programming in Java Specialization - Coursera
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Skills

C (Programming Language) • File Systems • C++ • Distributed Systems • Design Patterns • Machine Learning • Algorithms • Ultra Low Latency • RAFT • Distributed Systems