Resume - Jianfeng Tan

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Experience & Education

2018.05-present	Ant Group	Operating System	P7 -> P8 -> 17
2015.08-2018.04	Intel	DCG NPG	Grade 6 -> 7
2014.07-2015.08	VMware	NSBU	MTS-2
2011.08-2014.06	Tsinghua University	Computer Science and Technology	Master
2007.09-2011.06	Nankai University	Software Engineering	Bachelor

Related Projects

2018.05-present   **Cloud-Native Infrastructure** a*s Tech Lead & Manager*

- **ANT OS**: Maintains Linux OS for cloud and output scenario, enhancing performance, stability, isolation, support of muti-vendor CPUs, Tooling & Processes and Testing.
- **NanoVisor:** Developed the next-generation secure container based on gVisor, featuring NanoVM hypervisor, userspace network stack (TLDK), customized Go runtime, and more. Achieved 20w PODs in production, reduced CPU overhead from +52% to 10% less CPU usage, and improved throughput by 30~80% on nginx/redis compared with runc.
- **FaaS**: Engineered a high-performance engine achieving cold start times <5ms, minimal memory footprint (<1MB), and scaling to over 4,000 instances per second per node.
- **MLSys:** GPU virtualization and profiling, optimized kernels, throughput-first inference, LLM fast scale-out, RL performance optimization, and agent tool sandbox.
- Published 3 papers (TCP-Fuzz@ATC'21, AFaaS@OSDI'25, SKernel@EuroSys'26) and 7 patents.

2015.08-2018.04   **Opensource project DPDK** *as tech lead*

- **DPDK containerization:** Designed and implemented virtio-user as the interface, integrating dynamic memory management to optimize resource utilization and proposing Multus-CNI for enabling multi-network paths for containers.
- **SmartNIC development:** Contributed to FPGA/ASIC based NIC projects, focusing on technologies such as vDPA (virtio Data Path Acceleration) and advancing the virtio 1.1 specification.
- **vSwitch (**OVS-DPDK**):** Supported vSwitch projects including those used by Aliyun, Meituan, and JD, enhancing capabilities with features such as hot-upgrade, hot-migration, and VM memory hot plugin capabilities to improve performance and scalability.
- Published 1 paper (virtio-user@ KBNets2017); maintained virtio/vhost in DPDK.

2014.07-2015.08   **Load balancer on NSX edge at VMware** *as an individual contributor*

- Design and implement a prototype of highly scalable load balancer in user space with DPDK as packet-level processing, FreeBSD's TCP/UDP as network stack, and a hierarchical-async model to make it scalable across multi-cores.
- Gain lots of experience in L4/L7 load balancer (especially in IPVS, Nginx, and HAProxy), as well as related technologies (like netfilter, SSL/TLS) and different kinds of open source softwares.
- Have a deep understanding of network virtualization, including methodologies (like control -forwarding layer separation), key technologies (like DFW and micro-segmentation), related protocols (like vlan/vxlan, DHCP), and implementation (of distributed switch, router),etc.
- Skilled in performance tuning and trouble shooting.
- Keep an eye on projects like net-next-nuse, mTCP, libuinet, netmap, OSv etc.

2013.08-2014.05	**Memory virtualization perf tuning and application in system security** *As gradation project of Master Degree*

- Focused on memory virtualization performance tuning and its application in system security, including para-virtualization methods and VM-Exits reduction techniques.

2012.10–2013.01	**Kernel Analysis and Security Evaluation of Open Source OS** *Supported by National Core-High-Base Major Project of China*

- Responsible for analyzing MAC of Linux, including Flask, LSM and its four implementations, SELinux, Smack, AppArmor and Tomoyo Linux
- Assisted in analyzing authentication, audit, DAC, network security of Linux

2009.09-2011.03	**Smart Remote Control of Projectors** *Supported by the National Undergraduate Innovative Experiment Program*

- Designed and implemented a smart remote control system for projectors based on ARM platform with WinCE, integrating PocketSphinx for speech recognition.

Skills

- Proficient in C/C++, Go, Perl, Bash scripting.
- Extensive experience with Linux and various open-source software.
- Interests include system security (exploitation analysis), SDN, networking stack, k8s, container, and x86 architecture.

Self-evaluation

- Aggressive, responsible, and indomitable; adept at organizing, coordinating, and communicating; thrives on challenging work.