

Alexander Popov



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Location: Moscow, Russia. Ready for relocation

Areas of Expertise: C++, C, Network programming, DPDK, System programming, TCP/IP, SDN, Linux, Network ASIC programming, Team Leadership

About me

Software Engineer with focus on Linux system and network programming. Have a solid background in computer networks. Able to work on my own without supervision and cover all aspects, from high-level design to implementation. I see my next position as software engineer working on network/system/performance/backend tasks but I'm open for new areas and languages too.

Keyword experience

C++ Linux developer

C++11 and newer, stdlib, RAII, smart pointers, memory management

Unit testing: google test

Network programming: Linux sockets, Linux I/O multiplexing, Intel DPDK(kernel bypass)

Build: CMake, gcc, g++, ld, make, ninja

Debugging: strace, perf, gdb, eBPF

Scripting: bash, python

Linux kernel: build a kernel, build modules, porting changes, understanding the kernel source code

Concurrency and multithreading: Linux threads, spinlock, mutex, x86, memory barriers, atomic operations, BEAM(Erlang VM) concurrency

Linux: Ubuntu, CentOS, Open Network Linux(for "bare metal" switches)

CM/CI: Docker, Kubernetes(microk8s), Ansible, Jenkins

Network: TCP/IP, switching, routing, Linux bridge, Linux network namespaces, Open vSwitch, SDN

Experience

Oct 2020 - Jan 2022: Simulator Dev Team Lead, [SberAutoTech](#)

Project: Simulator - virtual environment for development and testing software for self-driving cars. (C++, Python, UnrealEngine4, ROS2)

- Integration of a new simulator - CARLA
- Architecture of integration
- Programming: C++, Python
- Researching reality gap problem and data-driven approach for simulation

May 2015 - Oct 2020: Lead developer, [Brain4Net, Inc.](#)

Project: SwitchOS - SDN multilayer network packet switch software with DPDK(softswitch) and network ASIC dataplane(for whitebox switches).

Achievements as a team leader

- Led development from scratch to trials with real users
- First OpenFlow softswitch certified by Open Network Foundation
- Started new direction of development - soft for bare metal switches
- Played a key role in resource management and hiring process while our team was growing along with the project from 3 to 7 members

Achievements as a software developer

- Up to down troubleshooting tools(C, C++, ASIC vendor SDK)
- Backend OpenFlow packet classifier, 3+mpps, non-block readers(C++)
- Input/Output packets subsystem(C++, DPDK)
- In-Band connection subsystem(C++, sockets)
- Performance improvements(Linux perf, IXIA packet generator)
- One step build(CMake, docker, ninja, make)

September 2013 - May 2015: Web developer, [CTI](#)

- Web development with Ruby On Rails
- Integration with Cisco products for VoIP and video conferences
- Configuration management with Chef-solo

January 2012 - September 2013: Software developer, Programpark

- Design and implementation embedded DSL based on Ruby(JRuby)
- Fault tolerance implementation(RabbitMQ, ZooKeeper)

Public speaking experience

2018: Secon 2018, Penza, Russia, "Common mistakes on development Linux TCP applications"

2014: DevConf, Moscow, Russia, "Tracing events in logs"

2011: NTTM, Moscow, Russia, "Using GPU for the real-time processing and render a radar image"

Education

2006 - 2012: Master of Science in Computer Science, Moscow Aviation Institute (National Research University)