Alexander Magola

Location: Russia, Novosibirsk | **Born:** 1978

Email | **LinkedIn** | **GitHub** | **GitLab** | **BitBucket**

About me

I'm a Linux software engineer with many years of experience. I always pay attention to the quality and to the performance (when it's necessary) of a code/product and prefer Linux environment as for work as for home. I can and like to design/improve architecture of projects and to do some researches. I like simple but flexible solutions when it's possible even though they aren't trendy. And of course I'm ready to learn something new.

Languages

- **Russian**: Native speaker
- **English**: Intermediate

Main Technical skills (short list)

- **Operating Systems**: GNU/Linux, MS Windows
- **Programming languages**: C/C++, Python, bash (basic skill)
- **Version control**: Git, Mercurial
- **Development Tools**: GCC, Clang, KVM/QEMU, Docker, Waf, MSVC
- **Technologies**: Multithreading, IPC, Shared memory, Networking, RPC, regular expressions
- **Testing/CI**: GTest/GMock, GCC/Clang analyzers/sanitizers, Python unittest/pytest, Jenkins CI, TravisCI, GitHub Actions
- **Databases**: PostgreSQL, MySQL, BerkeleyDB
- **Issue tracker**: Redmine, GitHub Issues, GitLab Issue Tracker

Technical Experience

Jun 2013 — present time

Open Source Developer

It's attempt to develop some open source projects sometimes: **GitHub**, **GitLab**

- ***Programming languages***: Python, bash
- ***Tools and technologies***: GCC, CLang, MSVC, Waf, Python unittest/pytest, pylint, python coverage, KVM/QEMU, Docker, TravisCI, GitHub Actions, Markdown, reStructuredText, Sphinx (documentation generator)
- ***Version control***: Git, Mercurial
- ***Operating Systems***: GNU/Linux, MS Windows (tests only), MacOS (TravisCI/GitHub Actions only)

Apr 2012 — Feb 2017

Linux Team Leader at **Signatec** [Russia, Novosibirsk]

Managed a long-term Linux project Rapira of lawful interception of internet traffic with a team of 5 C/C++ developers and 1-2 QA testers. This project had strong requirements for performance and stability. Designed many parts of the architecture. Developed some important/critical code. Reviewed other code of the project. Introduced several things to improve quality of the project: GTest, gcov, LLVM Clang static analyzer, cppcheck, AddressSanitizer/LeakSanitizer (GCC/Clang), -Werror. Tried to improve some technical knowledge of the team and taught myself. Conducted daily short meetings to review current state of the project (like daily scrum). Made many important decisions including resolving problem of memory fragmentation.

Managed/improved my team workflow including:

- Jenkins CI server: installed/configured, made additional scripts (bash, python)
- migration from SVN to Mercurial:
  - installed/configured selected by myself SCM-Manager as a central repository server for internal use.
  - made short manuals for my team
- organizing small cluster of KVM/QEMU servers (Proxmox VE + simple backups of images) on 2 physical servers with roles: http proxy, SVN, hg/git server, Redmine, Jenkins CI (main + several agents)
- base Linux firmware image based on Gentoo with ability to install on any computer

Experience in brief:

- ***Programming languages***: C++ (03, 11), Python, bash
- ***Tools and technologies***: GCC, CLang, Intel TBB (mostly flow graph, spin mutexes, malloc), MessagePack, ZeroMQ, Boost, GTest/GMock, Google Benchmark, Jenkins CI, Clang static analyzer, cppcheck, AddressSanitizer/LeakSanitizer (GCC/Clang), KVM/QEMU
- ***Databases***: LMDB
- ***Version control***: Mercurial, SVN
- ***Issue tracker***: Redmine
- ***Operating Systems***: GNU/Linux (Gentoo, Debian)

Dec 2009 — Apr 2012

C++ Linux Software Engineer at **Signatec** [Russia, Novosibirsk]

Was a main developer and one of architects of a system of distributed services DSS (for C++ SOA solutions on Linux, similar to WCF in .NET). The system allowed to communicate different services between each other using TCP/UDP/Unix (Local IPC) sockets and Shared memory by configuring files in XML/JSON formats. (C++, Linux)

Managed sub project of web interface for DSS with one Python developer.

Was involved in development of some base Linux/POSIX C++ libraries for local needs like networking, date/time, filesystem, threading, etc. (C++, Linux)

Initiated and installed/configured Redmine as a issue tracker for use in our team. Helped to learn how to use it. (Debian Linux, Redmine, Nginx)

Made useful build system BDS based on Waf for C/C++ projects on Linux. This system was being successfully used for local C/C++ projects all the time I worked for this company. (Python, Waf, Linux)

- ***Programming languages***: C++, Python
- ***Tools and technologies***: GCC, Waf, TCP/UDP/Unix sockets, Shared memory
- ***Version control***: SVN
- ***Issue tracker***: Redmine
- ***Operating Systems***: GNU/Linux (Gentoo, Debian)

Nov 2007 — Nov 2009

Project Manager/Team Leader at **Internet Service** [Russia, Novosibirsk]

Designed architecture and developed experimental real-time web search system. (Scala, Jabber/XMPP)

Made research with some experiments for potential project of a web storage for user photos/pictures. (Python, Java, Hadoop/Hbase/HDFS, Lucene, PostgreSQL, Thrift)

Designed architecture and developed some back-end part of distributed DNS system. (Python, Twisted, BIND, BerkeleyDB with replications, PostgreSQL, AMQP, RabbitMQ)

Managed web searching project Assista (similar to google search) with team of 2-5 front-end/back-end developers. Was improving/developing the project core search engine solution based on Sphinx (C++ open source search engine). Was fulfilling some sysadmin tasks for the project remote computer cluster with more than 100 servers (CentOS) using bash/ssh and own perl scripts. Was improving the project architecture. (C++, Perl, MySQL, memcached, Sphinx, bash/ssh) This project was one of ambitious projects of the main customer of that company. It was my first acquaintance with distributed systems.

- ***Programming languages***: C, C++, Java, Perl, Python, Scala
- ***Tools and technologies***: MSVS, GCC, Sphinx (search engine), bash, ssh, Twisted (Python network framework), memcached, BIND, AMQP, RabbitMQ, Thrift
- ***Databases***: MySQL, PostgreSQL, BerkeleyDB
- ***Version control***: SVN
- ***Issue tracker***: company's own internal web application
- ***Operating Systems***: MS Windows, GNU/Linux (Gentoo, CentOS)

Nov 2006 — Oct 2007

Software Developer at **Internet Service** [Russia, Novosibirsk]

Participated in startup project of drawing web application with ability of recognition of hand-drawn shapes. Made experimental module of recognition (C++, OpenCV, Linux).

Was in a team of development of multi chat client-server application Avago supported audio and video. Was involved in development as for client side (C++, WTL, FFmpeg, MS Windows) as for server side (Java, Red5, MySQL, Linux) of the application.

- ***Programming languages***: C++, Java
- ***Tools and technologies***: MS Visual C++, WTL, JVM/JRE/JDK, FFmpeg, Red5 (Java media server), Jetty, MySQL, OpenCV
- ***Version control***: SVN
- ***Issue tracker***: company's own internal web application
- ***Operating Systems***: MS Windows, Gentoo Linux

Apr 2005 — Oct 2006

Software Developer at **Technodesign** [Russia, Komsomolsk-on-Amur]

Participated in improvement/expanding of web site for local billing system. (Perl, MySQL, Linux)

Made base of a project for the file storage system for web. Participated in the architecture design and implementation of the front-end part. (Perl, Catalyst, MySQL, Linux)

Made a client application for a HotSpot system. (C++, XML-RPC, MS Windows)

Developed a plug-in for FreeRADIUS for authentication, authorization and accounting internet sessions from pppd and VoIP calls from GnuGK for local billing system. (C, MySQL, Linux)

- ***Programming languages***: Perl, C, C++,
- ***Tools and technologies***: GCC, make, MySQL, H323, HTML, Catalyst (Perl MVC Web Framework), FreeRADIUS, VoIP (GnuGK), CVS, MS Visual C++, STL, WTL, XML-RPC
- ***Operating Systems***: Slackware Linux, MS Windows

Jan 2001 — Jun 2003

Software Developer at Komsomolsk-on-Amur State Technical University (**KnASTU**)

I was postgraduate in KnASTU and had task to develop a calculation program of stress-strain state of solid materials with cracks based on boundary element method. This project was supposed to be my PhD thesis.

- ***Tools and technologies***: MS Visual C++, MFC, STL, Win32 API

Education

Sep 1995 — Jun 2000

Komsomolsk-on-Amur State Technical University (**KnASTU**)

- ***Degree***: Master's degree in applied mathematics (Specialist degree)
- ***Tools and technologies***: Turbo Pascal, Turbo C, Borland C++ Builder, MS VB/VBA, MS Visual C++, MFC, STL, Win32 API