

Maxim Zakharov, Curriculum Vitae

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PERSONAL PROFILE Highly skilled *Unix Software Developer* with *10+ years of experience* in web development, open source development, telecommunications and financial industry. Over 8 years in small team management and production support. Innovative and results-oriented individual with strong problem solving and self-motivational skills.

EXPERIENCE SUMMARY

- 10+ years of software development using C/C++, Perl, PHP, JavaScript, UNIX shell scripting and some other languages.
- Hands-on experience in information retrieval and search engine technologies, web data mining, natural language processing.
- Solid UNIX systems experience (FreeBSD, Linux, some others).
- Sound knowledge of administration and performance tuning of FreeBSD, Apache, PostgreSQL, MySQL.
- Able to work in teams or independently; able to lead a small team.

TECHNICAL SKILLS SUMMARY

Programming Languages: C/C++, Perl, PHP, SQL, JavaScript.

Experienced and specific languages: Assembler, Basic, Fortran, Lisp, Pascal, PostScript, Prolog, RSL.

Tools and Technologies: SDLC, CVS/Subversion, autoconf/automake, GNU debugging and profiling tools, Perl DBI, FTP, HTTP, TCP/IP, CGI, Apache + mod_perl, Apache modules in C and Perl, XML, HTML, CSS, AJAX, \LaTeX .

Databases: PostgreSQL, MySQL, SQLite, Oracle.

Operating Systems: Unix, FreeBSD, Linux, Sun Solaris, MacOS X (Darwin), Windows.

EMPLOYMENT HISTORY

Director / Lead Developer

DataPark Ltd.
August 2002 – November 2010

Duties:

- Design, implement, test and debug software in the C/C++, Perl, PHP and JavaScript languages for FreeBSD and Linux based sites (some of them are multi-PC installations).
- Design, implement, test and debug of modules for the Apache web-server in C and Perl languages.
- Provide performance and efficiency analysis of web sites, track down the errors and insufficient performance.
- Adopt third party software to the needs of the company and its clients.
- Provide project documentation.
- Discuss the requirements and negotiate implementation time frames with clients.
- Advise clients on using and configuring software made by the company in particular projects.

Projects and Achievements:

- *DataparkSearch Engine* (www.dataparksearch.org), an open sources web-based search engine written mainly in C language and released under GPL. It works on many UNIX-like operating systems with PostgreSQL, MySQL or SQLite sql-servers. It able to parse HTML, XML and plain text data (and any MIME type with libextractor library or an external parser) accessible via HTTP, HTTPS, FTP or on local file system or directly from SQL-database.

- Developed and implemented the *Neo Popularity Rank*, a link-based ranking algorithm to order the search results, as well to mark out automatically the most important sentences for document summary.
- DataparkSearch Engine evaluation in the [genomics adhoc track](#) of TREC-2005. The DataparkSearch's model of relevance was compared with other information retrieval systems. Two relevance methods available in DataparkSearch, the Full and the Fast, were compared also with each other.
- Implemented the *Summary Extraction Algorithm (SEA)*, an algorithm of the summarizing documents automatically. Studied the impact of such summaries on document ordering in search engine results.
- Implemented the *Phrase segmenter for sentences in East-Asian languages*. DataparkSearch's segmenter is based on the segmenter of the Linguistic Data Consortium (LDC) and the University of Pennsylvania (UPENN), was translated from Perl into C language and was modified for [better performance](#) (as for speed as for better precision and recall).
- The *mod_dpsearch* module was implemented for both 1.x and 2.x branches of the Apache http-server. Which allows to incorporate DataparkSearch Engine into the Apache http-server providing ability to preload all data and templates which are used to answer search queries and that reduces the average response time.
- An automatic charset and language guesser was implemented for the DataparkSearch Engine. It can recognise more than 80 various charsets and 25 language groups (include UTF-8, BIG5 and other multi-bytes encodings). A special learning mode was developed to construct maps for new languages and character sets and therefore to expand the set of supported languages and encodings.
- Implemented the system for memory debugging and leak detection, which is used to test and control the quality of DataparkSearch. It's based on Electric Fence 2.2 by Bruce Perens, ported to FreeBSD operating system and incorporated into the DataparkSearch's source tree to be compiled in the special memory debugging mode. This system was very helpful in the catching of several wired bugs in memory handling. Also it allows check memory operations before releasing a new version of DataparkSearch to avoid such problems. The similar debugging system was implemented for file descriptors.
- *Sochi city search engine and web-directory (inet-sochi.ru)*. Developed a bundle of scripts in Perl for this site automation. The DataparkSearch Engine has been deployed as a search engine over resources collected in this directory; the search results page has been enriched with auxiliary data from sub-searches in video, phone base, and query history.
- *A data mining system for phone number extraction* from web-pages indexed by the Sochi city search engine. This database is used to provide additional search results with phone numbers related to a user query.
- The LancOS (www.lancos.com/webtherm.html) server for gathering data from air temperature sensors was ported to FreeBSD OS and rewritten for using TCP/IP instead of UDP. A similar server was implemented to gather the data from air pressure sensors.

Developer

**mnoGoSearch development team
September 2001 – November 2003**

Duties:

Design, implement and maintain project's code in C language by tracking defects and feature requests.

Achievements:

- Picked-up and maintained the code implemented the cache mode storage.
- Improved the algorithm of automatic language and charset guessing.

- Implemented phrase segmenters for Chinese, Japanese and Thai languages.
- The project was ported to the Apple Darwin OS.
- Implemented various functionality improvements (include the meta-clusterisation, the ispell-based fuzzy search, the support for the content encoding, the storage for indexed documents).
- Made source code optimisations and troubleshooting.
- Updated project documentation.

Head of IT

**Bank of Moscow, Sochi branch
September 1999 – September 2001**

Duties:

- Lead a group of three support engineers ensuring maintenance of the accounting system with strong periodical deadlines.
- Provide Production Support for software and hardware used within the company. Apply upgrades and fixes on fail changes, applying patches, reconfiguring for day-by-day needs.
- Administer specific and servicing operations in the general ledger.
- Perform the support and administration of the telebanking system "Client-Bank".
- Administer corporate email system.
- Maintain the office PBX (Private Branch Exchange).
- Organise user training and advise staff on working with the software.
- Ensure the smooth operation of the bank's technology platform.

Achievements:

- Planned and coordinated the development and upgrade for local computer network and computer equipments.
- Coordinated set-up of a WAN network for inter-office communication and plastic card authorisation using Cisco and Motorola equipments.
- Introduced and installed the telebanking system "Client-Bank".
- Installed and maintained the corporate Internet firewall.
- Developed a bundle of scripts in RSL language for ad hoc reporting.

Head of IT

**Mosbusinessbank, Sochi branch
September 1997 – September 1999**

Duties:

The Sochi branch of Mosbusinessbank has been acquired by the Bank of Moscow, thus the Duties are equal to those listed above.

Achievements:

- Lead a group of two engineers ensuring maintenance of the accounting system with strong periodical deadlines.
- Planned and coordinated the redesign of computer network in the branch.
- Developed a bundle of scripts in RSL language for ad hoc reporting.

Sr. Production Support Engineer

**Mosbusinessbank, Sochi branch
October 1996 – September 1997**

Duties:

- Provide Production Support for software and hardware used within the company.
- End-user support and training, advise staff on working with the software.

Achievements:

- Streamlined the daily, monthly, quarterly and yearly reporting cycles that allowed to provide all the necessary reports to head office and to regulator office on time.
- Developed a bundle of scripts in RSL language for ad hoc reporting.

Software Engineer

**UnionCard Sochi Ltd.
April 1995 – October 1996**

Duties & Achievements:

Designed and deployed the installation of plastic card authorisation centre using Motorola equipment and software provided by Union Card company.

Analyst Programmer

**MENATEP Bank, Sochi branch
June 1994 – April 1995**

Duties:

- Provide Production Support for the accounting system with strong periodical deadlines.
- Development of modules for high-complexity reports in FoxPro database and Excel spreadsheets.
- End-user support and user training.

Achievements:

- Deployed and maintained a inter-office communication network via Sprint Network.
- Improved execution time for several high-complexity reports.

Jr. Researcher

**Russian Academy of Science,
Sochi research center
August 1993 – June 1994**

Duties:

Implement and maintain software using C and Unix shell languages.

Projects and Achievements:

- Developed and implemented local community news/ mailing-list server under the "Informatisation of Russia" program.
- Supported and maintained the city public UUCP network.
- Wrote a set of programs and scripts in C and Unix shell to gather accounting data for billing system.

EDUCATION

M.V. Lomonosov Moscow State University, Moscow, Russia
Faculty of Computational Mathematics and Cybernetics.
BSc in Computer Science and Applied Mathematics (major in Computation Systems Software), 1993.

INTERESTS

Information retrieval, web mining, algorithms, open source software, multi-threaded and multi-process programming, problem solving, code optimisation and troubleshooting.

ACTIVITIES

Editorial: blogs [SoNotes](#) and [Founds](#) (in particular, a section related to algorithms and code optimization: blog.dataparksearch.org/category/algorithms-and-technologies); [the Sochi city history timetable](#); [the World history timetable](#).

REFERENCES

Available upon request.
Also see my *LinkedIn* profile: <http://www.linkedin.com/in/dpmaxime>