



KONSTANTIN NARKHOV

CONTACTS

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EDUCATION

**National Research Nuclear
University MEPhI**
(Moscow Engineering
Physics Institute)

Post-graduate study/course
at **Scientific Research
Institute of System
Development**

ABOUT ME

My interests are in the field of real-time systems programming, development modeling software for embedded systems, test automation and software verification. I am working on formalized description of multithreaded applications, development of automated software generation facilities & monitoring tools for multithreaded real-time applications.

HIGH SCHOOL

Sept 1999 - Feb 2005: National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), faculty of Cybernetics, department №12 "Computer systems and technologies" (KSiT). The department trains bachelors and masters in the directions 09.03.01 and 09.04.01 "Informatics and computer technology". Disciplines studied within the course: circuit and system engineering, programming languages and technologies [1].

Graduation thesis: "Development of hosting platform for Internet providers" [2]. Supervisor: Vasilyev N.P. [3]. Thesis technologies & features: Windows 2000 Server (MS SQL Server, MS IIS, ISAPI, ASP, WSH) & Delphi 6. Thesis grade: excellent. Developed under the diploma project software was integrated by "M35 Network Provider" in Nov 2005.

Graduating specialty: 09.03.01-01 "Computing machines, complexes, systems and networks" [4].

POST - GRADUATE

Apr 2007 - Aug 2009: Scientific Research Institute of System Development. Disciplines studied within the course: DSP programming & embedded real-time systems programming. Advanced english language course at The Institute of Linguistics, Russian Academy of Sciences. Advanced philosophy course at Institute of Philosophy, Russian Academy of Sciences.



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EDUCATION

English: EFSET –
Advanced/Proficient;
CEFR – C1/C2

Polish: A2/B1

JOB / SKILLS

**Scientific Research
Institute of System
Development:** engineer,
junior scientist,
senior scientist

C



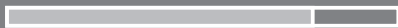
Perl



Linux: admin/setup/use



Linux: bash, awk, make



Linux: git



Linux: gtk, glib



Linux: qt, eclipse



LANGUAGES

English: advanced level: reading articles & documentation, writing. Speaking at an intermediate level. Education at school, university and post-graduate (in general more than 10 years). I've passed an intensive 2-year training course "English First". EFSET - Advanced/Proficient, CEFR - C1/C2.

Polish: A2/B1 level. I've passed a 2-year training course at Polish Cultural Center in Moscow [[5](#)].

JOB

Scientific Research Institute of System Development

- Sept 2005 - Aug 2009: engineer;
- Aug 2009 - Dec 2015: junior scientist;
- Dec 2015 - Mar 2017: deputy chief designer;
- Mar 2017 - present: senior scientist.

SKILLS

- Software development for hard real-time embedded systems;
- System data transfer libraries development (for RT OS, libraries provide data transmission over high-speed channels: Ethernet, RapidIO);
- Unit tests development (for RT OS, performance tests for RapidIo, Ethernet, VGA, MIL-STD-1553, RS232 / 485, I2C, QBus, VME);
- Multi-thread programming (POSIX.1-2008);
- Monitoring tools development (for multi-threaded applications that are running on multiprocessor / cluster systems);
- Visual environments development for Linux-like systems (glib, gtk, qt, development of eclipse plug-ins [[6](#)]);
- Parsers and text data analysis tools programming (C, Perl, Awk);
- Development, maintenance and support of compilation and assembly systems for distributed projects (make, automake, autoconf, kbuild);
- Git & Continuous Integration (CI-scripts/tests for Gitlab);



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PROJECTS

SENIOR DEVELOPER IN PROJECTS

I've taken part in projects at Scientific Research Institute of System Development:

- Utilities for automated generation of applications for real-time systems (certified visual environment for real-time applications development);
- Library for pipelined data transmission under RapidIO communication environment;
- Thread monitoring library for multi-thread application runtime control;
- General multi-thread programming technology for real-time OS.

COMPANIES

JOINT PROJECTS

I've taken part in joint projects between Scientific Research Institute of System Development & other companies:

- NII "Kulon" [[7](#)], senior developer;
- NII "Submikron" [[8](#)], senior developer;
- NPO "Rubikon-Innovation" [[9](#)], senior developer;
- CNIAG [[10](#)], junior developer;
- "Fazotron-NIIR" [[11](#)], junior developer;
- Concern "Okeanpribor" [[12](#)], developer.

CONFERENCES

PRESENTATIONS

- Participation in Conference on Information Security Problems "Perspective-2009" [[13](#)];
- Participation in Congress of young scientists of Russian Academy of Sciences [[15](#)];
- Participation in the seminar "Design and Implementation Problems of Basic Hardware and Software" with a report on the topic "Esterel SCADE - software development solution for real-time systems" [[16](#)];
- Participation in the seminar "ARP 4754A & DO-178C Compliant Model Based System & Software Engineering" [[17](#)].



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PAPERS

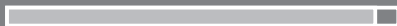
SCIENTIFIC PUBLICATIONS

- Proceedings of the Conference on Information Security Problems "Perspective-2009". Volume 1, page 177 - "Programming in real-time systems: automation and security" [[14](#)];
- "Source code generator for real-time systems". Programmnye produkty i sistemy, № 4, pages 24–30, 2010 [[18](#)];
- "Techniques provided for vulnerabilities reduction in special real time software". Programmnye produkty i sistemy, № 3, pages 89–95, 2012 [[19](#)];
- "Realization of controlled execution principle for realtime applications". Proceedings of SRISA RAS, Volume 5, №2, pages 113–121, 2015 [[20](#)];
- "Monitor Library for Multithread Programs". Proceedings of SRISA RAS, Volume 7, №1, pages 70–74, 2017 [[21](#)].

EXPERIENCE

ADVANCED SKILLS

XML/XSD



HTML



CSS3/JS



Bootstrap 3/4, MDL



MariaDB, PostgreSQL



PIC microcontrollers



Website Development



I've advanced experience in:

- Perl: parser development, practical modular development skills, OOP in Perl (native classes, Moose, Moo), unit testing, profiling, Selenium, static perlritic analysis;
- Perl: I'm developing my own CMS - Pheix CMS [[22](#)];
- Perl: acceleration & optimization of web applications - integration with Redis (basic skills in development for caching servers);
- XML, XSD: writing parsers, development validation schemes;
- HTML5 / CSS3 / JS;
- MariaDB, PostgreSQL: support/administration/operation;
- Basic skills in SQL;
- Front-end technologies: adaptive layout Bootstrap 3/4 [[23](#)], Material Design Lite [[24](#)];
- Devices development (based on PIC microcontrollers by Microchip Technology Inc.): calculating electrical circuits, Hi-Tech PicC and MPAsm with MpLabX IDE, simulation in CAD Proteus, self-made circuit boards (Sprint Layout, photoresist technology), board soldering skills incl. installation of SMD-components, microcontroller programming skills: duty cycle, interrupt processing, external interfaces: i2c, rs232, sensors, displays, drives;
- Website development, layout & design at personal web-design studio [[25](#)];



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HOBBYS

FREE TIME

It's fun to make music, especially when music makes you:

- [Condemned Cell \[26\]](#);
- [Utopia \[27\]](#);

I am the one, who likes cars - repair/tuning/etc. I am blogging about repairs, cross-model fitments & entertaining car stories [[28](#)].

THESAURUS

LINKS & CREDITS

1. <http://dozen.mephi.ru>
2. <https://nick.mephi.ru>
3. <http://narkhov.pro/download/thesis/devel-hosting-platform-for-providers.final.pdf>
4. https://mephi.ru/obrdeyat/obrazovatelnye-programmy/annot-2016/vo/sarfti/bak-sp/Annot_09.03.01_ENG.docx
5. <http://narkhov.pro/download/cert/polish/institut-polski-w-moskwie-vse-certifikaty.pdf>
6. <http://eclipse.narkhov.pro/tsagspo>
7. <http://www.niikulon.ru>
8. <http://submicron.ru>
9. <http://www.rubicon-i.ru>
10. <http://cniia.ru>
11. <http://www.phazotron.com>
12. <http://www.oceanpribor.ru>
13. http://www.sfedu.ru/pls/rsu/gallery.gallery_show?p_phg_id=2141
14. http://narkhov.pro/download/papers/perspective_2009.pdf
15. http://www.strf.ru/material.aspx?CatalogId=372&d_no=25089
16. <http://narkhov.pro/download/papers/scade-development-solution-for-rt-systems.pdf>
17. <http://esterel-technologies.com/arp-4754a-do-178c-compliant-model-based-system-software-engineering>
18. <http://www.swsys.ru/index.php?page=article&id=2605>
19. <http://www.swsys.ru/index.php?page=article&id=3221>
20. <http://narkhov.pro/download/papers/monitoring-library-2015.pdf>
21. <http://narkhov.pro/download/papers/monitoring-library-2017.pdf>
22. <http://pheix.org>
23. <https://bitbucket.org/apopheoz/rekana-html-markup>
24. <http://pheix.org/mdl>
25. <http://apopheoz.ru>
26. <http://condemnedcell.com>
27. <http://utopia.band>
28. <http://rdtiburon.ru>