

OBJECTIVES: I have an interest in high performance computing, development of effective algorithms and system programming. I am an experienced C/C++ programmer and currently working for the cosmic ray physics experiments developing the distributed data acquisition systems and high performance data exchange solutions.

Suren A. Chilingaryan, PhD

E-mail: csa@dside.dyndns.org

Phone: +49 176 680-93203

Maintained Public Software:

<http://dside.dyndns.org/projects/>

SKILLS

<u>Operating Systems:</u>	Linux, FreeBSD, Windows family;
<u>Programming Languages:</u>	C/C++, Perl, Python, SQL;
<u>Programming Technologies:</u>	System Programming (POSIX, WINAPI), Process Synchronization, Real-Time Programming;
<u>Embedded Programming:</u>	Fujitsu MB9136x and Phillips LPC21xx (ARM7);
<u>Network Programming:</u>	TCP/IP, CORBA, Web Services, OBEX, Apache Modules;
<u>Security Technologies:</u>	PAM, SSL, X509, XML Encryption and Signature;
<u>UI Development:</u>	GUI (GTK, QT, Curses), Internationalization;
<u>Databases:</u>	MySQL, OpenLDAP, BerkeleyDB;
<u>Web Scripting:</u>	PhP, HTML/XHTML, CSS, JavaScript, ActionScript;
<u>XML Technologies:</u>	DOM, SAX, Schema, XSLT, XForms, XML Security, SOAP;

PROFESSIONAL EXPERIENCE

2007 – present: **Researcher at Forschungszentrum Karlsruhe**

- Working on slow control system for KATRIN (KARlsruhe TRItium Neutrino) experiment and coil test facility at TOSKA (Test facility for Fusion Magnets).
- Integrated NI LabVIEW based slow control subsystem with Siemens WinCC control system using OPC DA interface.
- Extended control system with a remote control capabilities based on Web Services.
- Develop the dynamic web interface facilitating visualization and export of slow control data.

Used technologies: National Instruments LabVIEW, Siemens WinCC, ROOT, Microsoft SQL Server, MySQL, Web Services, AJAX, PhP, C/C++.

2005 – 2007: **Software Engineer at Yerevan Physics Institute**

- Participated in the design of infrastructure of the data acquisition system for ASEC (Aragats Space Environmental Center) and SEVAN (Space Environmental Viewing and Analysis Network) cosmic ray detector networks.
- Develop the microcode for the microprocessors controlling the detectors operation.
- Develop the middleware for the ASEC data acquisition system (multiplatform software controlling electronics through USB, Serial and Ethernet interfaces, MySQL interface, etc.)
- Develop web frontend to provide monitoring and control capabilities to operators.

Used technologies: C, Portable System Programming, POSIX, WINAPI, Network programming, Process Synchronization, XML technologies, Programming of Fujitsu MB9136x and Phillips LPC21xx (ARM7) microcontrollers.

2002-2005: **Associate Researcher at Forschungszentrum Karlsruhe**

- Designed a set of extensions to the OPC XML-DA protocol facilitating its usage in the high performance systems.
- Implemented benchmarking suite for performance comparison of various C/C++/Java XML toolkits measuring performance in multiple fields including SAX parsing, DOM manipulations, XSD Schema validation, XSL Transformation and XML Encryption and Signature.
- Implemented operating system abstraction library.
- Implemented multi-platform OPC XML-DA library and experimental server.
- Developed OPC XML-DA bindings for NI LabVIEW.
- Developed PHP OPC XML-DA client providing ability to represent experimental data by means of the standard web interface.

Used technologies: C, Portable System Programming, POSIX, WINAPI, Process Synchronization, CORBA, Apache module programming, Sockets, XML technologies, Web Services, NI LabVIEW, PHP.

2001-2002: **Software Engineer at Yerevan Physics Institute**

- Developed a web interface for facilitating centralized management of the department servers and workstations. Interface allows managing users (personal information, permissions), computers (DNS, DHCP, remote booting) and employee assigned tasks.
- Developed a web helper for X509 certificate authority management.
- Developed readout software for scientific equipment controlling cosmic ray detectors.

Used technologies: C, Perl, PHP, LDAP, X509 certificates.

1999-present: **Maintained Free Projects:**

- PAM module for system authentication using Bluetooth enabled mobile phones over OBEX protocol.
- RusXMMS project - library for automatic language/encoding detection and conversion, several patches for popular Linux music players, FTP clients and some other applications.
- SAND Kit is a Linux driver for the SAND PCI neuro-acceleration board (Developed at Forschungszentrum Karlsruhe) and neural network learning framework developed on top of this driver.

Used technologies: C/C++, Linux Driver Development, GTK+, PAM, OpenOBEX, XML, BerkeleyDB, Internationalization, Unicode, Macromedia Flash.

EDUCATION

July 2006: **PhD degree in Computer Science** at Institute for Informatics and Automation Problems of National Academy of Science of the Republic of Armenia.
Title: Universal Data Exchange Solution for Modern Distributed Data Acquisition Systems and Its Implementation for Cosmic Ray Monitor Networks.

1996-2001: **M.Sc. in Mathematics.** Moscow State University, Department of Mechanics and Mathematics, Chair: Mathematical Theory of Intelligent Systems
Diploma: Data processing using neural networks.

PERSONAL DATA

Nationality: Russian Federation
Date of Born: January 12, 1979
Spoken Languages: Russian, English, Armenian