

Zoran Constantinescu Fülöp

Education	1999-2004	<p><i>Norwegian University of Science and Technology (NTNU), Trondheim, Norway</i> PhD in Computer and Information Science</p> <p>“A Desktop Grid Computing Approach for Scientific Computing and Visualization” (available at http://www.diva-portal.org)</p>
	1992-1997	<p><i>University Politehnica of Bucharest (UPB), Bucharest, Romania</i> Dipl. engineer (MSc) in Computer Science and Engineering - specialized in compilers and translators, parallel and distributed programming, operating systems design, computer networks. Grad. thesis: “Scheme Compiler for the Java Virtual Machine”</p>
Research and development experience	2005 - present	<p><i>ZealSoft, Ltd., Bucharest, Romania</i>, Chief Research and Development Officer Role: Research, Design, Development of Hardware and Software Solutions Main projects:</p> <ol style="list-style-type: none"> 1. Unde.ro (“unde” means “where” in Romanian): the site is a geospatial search engine for Romania. Based on the Google Maps API, it adds new map tiles and address searching for the Romanian region. It contains a GIS database for address-based search. A specialized web-crawler is under development for finding in the Romanian web space different addresses or points of interest (see touristic, accommodation, gas stations, pharmacies, hospitals etc. within a given distance - to be available online, free). Here geo-referencing included (http://www.unde.ro) 2. GiPiX is a GPS/GSM based Automatic Vehicle Location (AVL) system under current development. It is meant to be both a personal and fleet management system for mobile device location over the Internet. The project involved the design and development, both hardware and software, of a GPS/GSM mobile tracking device, a communication protocol and back-end server, a database back-end and a GUI interface. Hardware development included full design of the embedded device, from schematics, PCB layout design, prototype production, assembly, testing. Different CAE/CAM tools were used. Software development included microcontroller programming in C (Microchip), embedded communication module programming in Python (Telit) or C (Microchip), communication protocol implementation, both on the embedded device, and on the communication server using C/C++ and Linux, database design, and a web interface for user presentation, using html, Perl, PHP, Javascript, AJAX, Google Maps API (http://gipix.unde.ro , http://www.unde.ro) 3. Gaccs - a multi-level TCP/IP-based control access system, which enables an authority to control access to areas and resources in a given physical facility, based on credentials. Hardware development included full design of the embedded device, from schematics, PCB layout design, prototype production, assembly, testing, by using various CAE/CAM tools. Software development included microcontroller programming in C (Microchip), implementation of a TCP/IP communication protocol, both on the embedded device and on the communication server using C/C++ and Linux, database design, and a web interface for user presentation, using html, JavaScript, AJAX; support for RFID proximity. 4. ePH - Framework for building of a dynamic user community that shares public interest information and knowledge that is accessible through always-on, context-aware services, open source project

5. zxChip: a project for developing a car engine ECU piggyback device for advanced race-tuning purposes with selectable running mode and realtime monitoring and logging capabilities. Hardware development included full design of the embedded device, from schematics to final product. Software development included Microchip microcontroller (PIC24) programming in C with USB support and Microsoft Windows .NET C++ application for configuring and monitoring the device.
6. RFC tester: a project that had Siemens AG as beneficiary, it aimed to model and develop a test platform for one of the RFC protocol drafts. The software is an implementation of the QoS NSLP, which is a NSIS (Next Steps in Signaling) Signaling Layer Protocol for signaling QoS reservations (e.g. bandwidth, delay, etc.). It was programmed in C/C++ for Linux, with a web-based real time monitoring user interface made with PHP & JavaScript /AJAX
7. IHS (Intelligent House Solution), which is intended to be an integrated solution for automatic control of house/small office processes, HVAC, etc.

1999-2003 *Norwegian University of Science and Technology (NTNU), Trondheim, Norway*
 Research Fellow, Computer and Information Sciences Department (IDI)
 Research and Development (RD) Projects while at NTNU:

1. Main designer and developer of the QADPZ system, an open source system for desktop grid and volunteer computing, allowing easy management of computational resources from idle computers in networks of computers. It was developed in C/C++, with support for multiple operating systems (Linux, Win, MacOS, Unix), multiple users, compression, and encryption. A subset of the Message Passing Interface (MPI) was implemented on top of QADPZ, allowing execution of already written programs, which use MPI, in a similar parallel environment. The system is installed on more than 80 computers from IDI's labs and on IDI's Beowulf cluster, and is currently used for computational intensive research projects around the world (<http://qadpz.sourceforge.net>);
2. Chief architect of the department's Beowulf cluster of 40 PCs used for research projects (clustis). Responsible for ordering, installation, configuration and maintenance of the cluster. It is running the Source Mage GNU/Linux operating system, a source based Linux distribution, where each of the installed software is compiled from source, with optimizations for the hardware platform (<http://ClustIS.idi.ntnu.no>);
3. Involved in the Computational Science and Engineering (CSE) project at NTNU university. This is an interdisciplinary, interdepartmental research project, with collaboration between different research groups in engineering, computer science and mathematics, from NTNU and the research organization SINTEF. There is a strong emphasis on high performance computing and numerical methods for problems in the marine fluid mechanics domain, using supercomputers and clusters.

1992 -1997 *University Politehnica of Bucharest (UPB), Bucharest, Romania*
 Undergraduate student, Computer Science and Engineering Department (CSE)
 Research and Development Projects while at UPB:

1. JScm - a compiler for the Scheme functional language, generating byte code for the Java VM; the project consisted in converting a Scheme program into the continuation passing style (CPS), then generating an equivalent low level Java assembly language program for the Java virtual machine, which was then compiled to Java byte code, using a Java assembler;

2. Unix Vision - an OO text-mode user interface for Linux. The project consisted in porting the Turbo Vision user interface (developed for DOS) to a Unix-style environment, and involved reprogramming the low level terminal device interface in C and assembler;
3. Ada2C++ - an Ada to C++ translator for Unix; the project consisted in a lexical and a syntactical analyzer for a subset of the Ada language, for the purpose of automated translation into C++.
4. IP stack for the Thix OS - implementation of the basic IP protocol stack for the Thix Operating System, an UNIX-like operating system developed in the CSE department.

Teaching experience	2008 - present	<p><i>Petroleum-Gas University of Ploiesti (UPG), Ploiesti, Romania</i> Visiting Assistant Professor, Computer Science and Information Technology Dept.</p> <ul style="list-style-type: none"> ➤ Lecturer for the Introduction to Parallel Computing course ➤ RD supervisor for master level student projects for the following courses: <ul style="list-style-type: none"> ○ Parallel Computing ○ Digital Libraries ○ Cryptography ○ Database Systems ○ Multimedia Databases
	1999-2003	<p><i>Norwegian University of Science and Technology (NTNU), Trondheim, Norway</i> Teaching Assistant, Computer and Information Sciences Department</p> <ul style="list-style-type: none"> ➤ Teaching Assistant for the Performance Evaluation course; ➤ RD Supervisor for student projects of the Customer Driven Project Work course. Each group of students has got a projects topic from a real software company and has been responsible for all stages of software development: requirements, analysis, design, testing, documentation, and implementation. Guided them in their work, have given them professional feedback, resolved any possible conflicts with the external customer.
	1997 -1997	<p><i>University Politehnica of Bucharest (UPB), Bucharest, Romania</i> Teaching Assistant, Computer Science and Engineering Department</p> <ul style="list-style-type: none"> ➤ Teaching Assistant and RD Supervisor for student projects of the Advanced Data Structures and Algorithms Analysis course. Defined the project subjects, had given the students relevant documentation, supervised them in their work, evaluated their results.
Working experience	2009 - 2011	<p><i>BMIF Journal - Bulletin of PG University of Ploiesti, Mathematics-Informatics-Physics Series (http://bmif.unde.ro)</i> Role: Managing Editor</p> <p>Main contributions: development of the journal's online peer review and publishing system, scientific reviewing, international database indexing</p>
	2004 - present	<p><i>OmegaSoft, Ltd, Bucharest, Romania</i> Role: Designer of Hardware&Software Architectures, Developer of hardware and software solutions, Linux System Administrator</p> <p>Main projects:</p> <ol style="list-style-type: none"> 1. Tourneo project: an on-line reservation system for hotels in Bucharest and many other cities in Romania. It had been implemented the on-line payment with credit card for this site, using the novel Visa/Mastercard 3D Secure system. The work was done in cooperation with Romcard, Romania's leading provider for card payment systems. It was one of the first three web sites in Romania accepting on-line credit card payments using this system (http://www.tourneo.ro); 2. ZCENT - a very low-cost GSM-based call center, with typical capabilities like: welcome message, call waiting/recording/forwarding, conference. The system is using out of the shelf phone terminals, connected to a PC using an original, custom made switching board. The software is programmed in C++ for Windows with a web interface for configuration and monitoring;

3. ZPOS/wPOS - a Point of Sale (POS) and back-office management system for fast foods. It is a network based system, that allows working both from Intranet and Internet and, also, multi-input (PDA, touch screen etc.). It works both on Linux and Windows operating systems, allowing a flexible deployment. The PocketPC module allows also to work from wireless points. Programmed in a combination of AJAX, PHP and C/C++ (WindowsCE), with a MySQL backend;
 4. Linux servers - administration and performance monitoring and tuning for LAN/Internet/VPN; advanced MySQL database administration and performance tuning.
- 1998-1999 *ZealSoft, Ltd, Bucharest, Romania*
 Role: Designer of Hardware&Software Architectures, Developer of hardware and software solutions, Linux System Administrator
 SIDER: an innovative (for 1998-year) Internet search engine, meant for the Romanian web-space that was a distributed system and was developed using modern object-oriented software engineering methods (RUP, UML). It was programmed in C++, Perl, and MySQL for Linux.
- 1999-2000
 2004-
 present *New Europe College, Bucharest, Romania*
 Role: Developer of various IT solutions
- Main projects:
1. NECLIB2: a full digital library that contains various media objects that represents 18000 classical music CDs (many of these being very rare) from a private collection that have been donated to NEC. Programed in MySQL, PHP, Javascript, AJAX, and C++/Linux (<http://library2.nec.ro>);
 2. NECLIB: a web based on-line library catalogue firstly developed for The New Europe College (NEC). The system allows the readers to do complex searches for books in the catalogue, and helps the librarian to keep track of the users and loans. Programed in Perl and MySQL for Linux (<http://library.nec.ro>);
 3. INTLIB: undergoing project for interconnecting all deployments of the same program at other similar institutions (see New Europe College, The Center for Independent Journalism, The Institute for Art History, The University of Arts), allowing distributed search in different catalogues;
 4. Undergoing work on different automation solutions of the existing IT infrastructure for easier management and monitoring.
- 1997 - 1998 *SOFOS, SpA, Rome, Italy*
 Role: Software Developer
 Worked in a large team on the ViaSat project. ViaSat is a real-time distributed vehicle security system using GPS positioning. It was developed in collaboration with Com.Net, SpA, subsidiary of Telespazio, Italy. The system is functional in Italy and Austria. I was involved in all aspects of software development, including analysis, design, developing, testing and documentation of the GPS position correction subsystem and the central communication subsystem. Developed in C/C++ for Windows NT, with TCP/IP for communication.
- 1997 - 1999 *Arexim, Inc, Bucharest, Romania*
 Role: Internet Consultant
 Worked part time for the Internet Service Providing Department. Main designer of the hardware infrastructure configuration, required Linux servers and software. The ISP department was providing dial-up Internet access for a couple of hundreds external clients;
 Provided technology solutions to different problems (software and hardware);
 Gained extensive experience in administering Linux servers, especially in Internet networking (routing protocols, ppp, mail, web, ftp servers), dial-up and leased line access;
 Developed a centralized user management software system using MySQL database. Configured the Linux kernel for different dial-up hardware equipment and modifying the required kernel drivers.

1996 -1997	<i>Bit Soft, Ltd, Bucharest, Romania</i>
	<p>Role: Project Manager, Software Developer Worked in a team with WTT (World Travel and Tourism), a Romanian travel agency, on the first Internet based on-line reservation system for hotels in Bucharest and other cities in Romania.</p>
	<p>Developer of the MAESTRO accounting software system. Involved in all phases of the product elaboration. The application is multi-platform (Windows, MacOS), and based on the 4D RDBMS.</p>
	<p>Worked in a team on the SITEL project. SITEL is the most used hotel front-end system in Romania. Involved in development of software interfaces with different other systems (pay-tv, telephone switching systems, etc.).</p>
	<p>Internet communication infrastructure design, implementation and maintenance using Linux PCs.</p>
1994 - 1995	<i>AnziSoft, Ltd, Bucharest, Romania</i>
	<p>Role: Software Developer FAST project, an application for product stock management of pharmaceutical companies. It is a database application written in FoxPro for DOS, with support for Novell/Netware networks. Heavy use of the SQL language was involved in the application.</p>
Volunteer experiences	<p>Student volunteer for the following conferences: SIGGRAPH (2000, 2001, 2002), Supercomputing (2001, 2002), IEEE Visualization (2000, 2001, 2002), IEEE Virtual Reality (2001), ROSE'95 (1995); An extraordinary experience was the SIGGRAPH 2001 conference, where, as student volunteer, I was part of the online committee team. We were responsible for the digital archiving of video and audio from most of the tutorials and paper sessions during the conference. The resulting movies, images and presentations were made available online during and after the conference.</p>
Reviewing experiences	<p>Participation in various open source projects (QADPZ, ePH etc.).</p> <ul style="list-style-type: none"> • BMIF Journal - Bulletin of PG University of Ploiesti, Series Mathematics Informatics, Physics - indexed in 5 international databases • International Journal of Computers, Communications & Control (IJCCC) - indexed in ISI Web of Science and several international databases • Journal of Digital Information Management (JDIM) • 2nd Int'l Conf. On Networked Digital Technologies (NDT 2010), Prague, Czech Republic - published in the Communications in Computer and Information Science (CCIS) Series of Springer LNCS • 3rd Int'l Conf. on the Applications of Digital Information and Web Technologies (ICADIWT 2010), Istanbul, Turkey • The 2010 International Conference on Informatics, Cybernetics, and Computer Applications (ICICCA2010), Bangalore, India • The International Conference on Computers, Communications & Control (ICCCC 2010), Baile Felix, Oradea, Romania
Membership	<ul style="list-style-type: none"> • INSTICC (Institute for Systems and Technologies of Information, Control and Communication) 2009 • IAENG (International Association of Engineers) 2008 • ACM (Association of Computing Machinery), IEEE Computer Society, National Geographic Society, PMI (Project Management Institute) 2000
Key Qualifications	<p>25 years of extensive work experience in various aspects of computer software analysis, design, development and testing; 18 years of experience with the Linux operating system at different levels, from installation, kernel hacking to high-level programming (since 1993, with my first SLS Linux installation, later moved to Slackware Linux); 16 years of experience with the Internet (high/low level network protocols);</p>

7 years of experience with digital hardware and embedded systems design and development, both at hardware and software levels;
Theoretical and practical knowledge of software engineering, object-oriented methodologies, operating systems, compiler construction, parallel and distributed systems, real-time systems;
Able to optimize programs, to use difficult algorithms and protocol specifications;
Programming languages: C/C++, Perl, JavaScript, Java, Python, PHP;
Parallel/distributed programming: MPI, PVM, Corba, Orca, Linda; functional languages: Scheme, ML, Lisp; databases: MySQL, PostgreSQL, MS SQL, Oracle;
Operating Systems: Linux, Windows, Android, eCOS, DOS, SunOS, Ultrix, CPM;
Schematic layout and pcb design: CadSoft Eagle;
Microcontroller experience: Microchip PIC12, PIC16, PIC18, PIC24, PIC32 with Microchip MPLAB/C compilers and CCS C compiler;
Embedded Linux systems;
Communication protocols: RS232, SPI, I2C, CAN, USB
GSM modules experience: Siemens/Cinterion MC35,TC65i; Telit GE863GPS; Simcom SIM300, SIM900; Quectel M10;
GPS modules experience: SiRF StarII, SiRF StarIII; uBlox LEA5,LEA6; Quectel L10;
RFID experience: 125kHz, 13.56MHz
Very good theoretical and practical knowledge of computer networks: Internet (TCP/IP), Novell (IPX/SPX), Windows (NetBEUI,SMB);
Excellent mathematics background and very good analytical skills;
Self-management, self-motivated, task-oriented, efficient and quick learner, imaginative, innovative and critical thinking, communication, initiative, determination, patience, problem-solving, and working well under stress, able to work in a team environment or unsupervised.

Languages

Romanian, Hungarian, English (very good)
Italian, Norwegian, French (satisfactory-good)

Hobbies

cooking, Linux hacking, electronics design, reading, digital photography, hiking, biking, travelling - in random order ☺

Publications

For the list of publications see <http://www.unde.ro/zoran/#papers>

Awards

National Mathematics Contest, Hungary, 1990 - Second prize.
National Mathematics Contest, Romania, 1986 - First prize.

References

Available upon request

Keywords

Software engineer, hardware engineer, system architect, research and development engineer