


<b>SORIN MANOLACHE</b>	
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Born 1976. Romanian citizen.	

Software engineer with four years industry experience and seven years academic research track.

<b>EDUCATION</b>	
Ph.D.	University of Linköping, Sweden, 2005. Dissertation title: <a href="#">“Analysis and Optimisation of Real-Time Systems with Stochastic Behaviour”</a> , published as a <a href="#">book</a> at Springer. Adviser: Prof. Petru Eles, University of Linköping, Sweden. Opponent: Prof. Xiaobo Hu, University of Notre-Dame, Indiana, USA.

<b>EMPLOYMENT HISTORY</b>	
Since Mar 2008	C++ Technical Leader at Orange France, Web Portals Department. First as a consultant employed by Alten France, subsequently employed by Orange. Responsible of Mediation components of the Orange Portal and of various Orange desktop clients. Specification, time budget estimation, design, implementation, testing, validation. Shipping of code, documents, and reports. Stood-in as project leader.
Oct 2006 – Feb 2008	Anti-virus Analyst at Fortinet Inc, Sophia-Antipolis, France. Virus analysis and signature, disassembling; customer support. Development of tools for automatic virus analysis. Presentations and lectures in the customer training process.
Jan 2006 – Mar 2006	Post-doctoral research assistant and lecturer at the University of Linköping, Sweden. Lecturer in Operating Systems, lecturing, examination, grading.
Dec 1999 – Dec 2005	Ph.D. student, Embedded Systems, University of Linköping, Sweden. Academic research and publication, dissemination in international scientific journals and conferences. Teaching, preparation of laboratory material, tutoring, grading.
Aug 2000 – Sep 2000	Internship at the research department of Ericsson Radio Systems, Kista, Sweden. Real-time UML-like object-oriented specification of soft-radio, the baseband processing of a multi-standard radio base-station.

<b>SKILLS AND COMPUTER LITERACY</b>	
Operating systems	– Linux, including kernel module development; administration, iptables, Debian package creation and management. – Unix API, including socket programming, signalling, concurrency and synchronisation, SysV IPC.
Computer languages	– Object oriented: C++, Java (J2SE), UML. – C. – Assembly languages, both TASM and AT&T syntax for x86, SPARC, ARM. – Scripting: bash, csh, Perl, PHP, awk, sed, ed – Database query language: SQL – Hardware description languages: VHDL, SystemC (an HDL in C++).
Libraries, tools, and APIs	– boost (asio, spirit, threads, date/time, interprocess, etc), pthreads, pcap, xerces, expat, curl, apr, cppunit, sqlite, smbclient – apache2 module development including a deep knowledge of the apache internals. – jmeter. – automake, autoconf, libtool. – GNU C/C++ compiler suite, including gdb debugger. Also cross-compilation and emulated execution. – bison/flex and C++ extensions thereof. – CVS and SVN.
Algorithms and theory	– Graph algorithms, complexity theory. – Real-time systems: Theory, schedulability analysis. – Performance analysis: Stochastic processes, Petri Nets, Markov chains, modelling and solving. – Optimisation algorithms. Both numerical and heuristic. – Meta-heuristics: Simulated annealing, tabu search, genetic algorithms. – Compiler construction, LALR grammars, regular expressions, NFA and DFAs.

	– DSP algorithms of the physical layer of GSM (CRC, Viterbi).
Networking	– TCP/IP, various application protocols such as HTTP, FTP, SMTP, SMPP. – GSM 2, physical layer of the radio interface.
Project management	– The Time-to-Market (TTM) process of Orange/Web Portals Department.
Soft skills	– Comprehensive and rigorous approach to problem solving, fast analytical thinking, thoroughness, dedication, high standards. – Presentation techniques, academic and technical writing. Formal training.

## PROJECTS

At Orange, Sophia-Antipolis, France:

- An at-runtime reconfigurable AdGateway with backends called in parallel. High throughput, very short latency. Critical for the availability of all of orange.fr. Design, development, validation, documentation.
- 5 web services and proxies implemented as apache modules written in C++. High throughput demands. In production at Orange.
- Short Message Peer-to-Peer Protocol (SMPP) transceiver and packet rewriter.

At Ericsson, Kista, Sweden:

- UML-like system-level specification of a part of baseband processing in a multi-standard BTS. Application modelling, task partitioning, timing requirements specification.

At the University of Linköping, Sweden:

- Analysis and optimisation toolset for real-time systems.
- Network-on-chip simulator.
- Compiler for a generic VLIW processor, instruction scheduling and dependency extraction.
- Development of an executable model of the baseband processing of a GSM BTS with Rhapsody, an RT UML tool.

At Fortinet Inc, Sophia-Antipolis, France:

- FPGA implementation of a regular expression parsing engine using VHDL on a Xilinx environment.
- x86 disassembler; similarity degree computation between binary programs based on control and data path analysis.

## COMMUNITY SERVICES, INVITED TALKS, MISCELLANEOUS

Community services	– Contributor to the apache module developer forum, – Reviewer for IEEE and Springer scientific journals in Embedded Systems. – Supervision of master thesis students.
Invited talks	– “Performance Analysis of Applications with Stochastic Task Execution Times”, at the “Distributed Embedded Systems” workshop, Leiden, The Netherlands, 2005. – “Petri Nets”, at the “Formal Methods for SoC Design” graduate course. ECE Department, Carnegie-Mellon University, 2004. – “The UML”, ibid. – “UML Modelling Case-Study: A GSM BTS”, at the annual meeting of the Electronic Design Automation Interest Group of Swedish industry, Stockholm, 2000, and at the “Design of Embedded Systems” graduate course, Mechatronics Dept., Royal Institute of Technology, Stockholm, 2000.
Scientific collaboration	Visit at the Electrical and Computer Engineering Department, Carnegie-Mellon University, Pittsburgh, USA, February–June 2004.

## LANGUAGES

English	Fluent, main language between 1999 and 2006.
French	Fluent, main language since 2006.
German	Fluent, primary and secondary education as well as the final examinations in German.
Swedish	Reading, understanding.
Romanian	Native speaker.

## ACADEMIC PUBLICATIONS

Publications and presentation slides available at <http://www.ida.liu.se/~sorma/>

## REFERENCES

Available upon request.