

Curriculum Vitae - Shawn Koppenhoefer

Dual-citizenship: Canada and Germany, C-Permit Switzerland
Marital status: Unmarried, no children
Availability: Immediately
Birth date: December 11, 1968

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Education and diplomas:

PhD in Computer Engineering, Swiss Federal Institute of Technology, 1996
BSc Mathematics, University of Waterloo, Canada, 1991
(double-honours degree in computer-science and combinatorics & optimization)

Languages: English, French, conversational Spanish, limited conversational German

Experience: PHP Programmer, SQL Database Designer (MySQL + Oracle 9i), system administration in universities and small-company environments (Windows/Mac/UNIX), web development (PHP, JavaScript, Java applets, CSS, HTML, J2EE, Eclipse and some AJAX) and application development (incl. Perl, FORTRAN, Pascal, Ada, COBOL, C, C++), user-application support and teaching (Excel, PowerPoint, Word, Illustrator, Photoshop, Dreamweaver, LaTeX, Outlook), IT research in distributed networks, object-oriented models, formal methods and specification, cryptography, graph-theory

Other creative activities: Argentine tango instructor, photography, classical violinist, aikido

OBJECTIVES:

My current objective is to join a multidisciplinary environment in a full-time or part-time position that can take advantage of my developer/system-administrator/database skills and can offer a varying range of responsibilities with software design, IT support, trouble-shooting, and teaching. I enjoy collaborating in edge-breaking beta development and implementing creative 'proof of concept' scenarios to demonstrate the feasibility and positive impact they can have on existing projects. I want to work on doing what can't be done, and moving in unexplored directions. I am fascinated with all aspects of computers & networks such as distributed networks and distributed computation and would enjoy formal specification and analysis, methodologies (SCRUM or otherwise), and all aspects of security.

PROFESSIONAL BACKGROUND:

2011 to present: EPFL, ARVE Research group, Lausanne, CH – IT/DBB Administrator, Developer & Scientific Researcher

ARVE develops a software-model & studies huge data-sources in order to understand the earth's climate. I collaborate with them on a scientific level (statistical analysis & publishing), as database expert (PostgreSQL8.3), web administrator (PHP5.3/CCS/JQuery/HTML/Google-Analytics/Wiki/Jahia) + SEO, Mac OS X Server administrator (WGM/LOM/TCP/IP/VPN), Unix-script writer (SH/AWK/R), file-backup, trouble-shooting and in user-support. I'm also accredited with the EPFL purchasing system (Sesame) and inventory system. The three research-projects I'm involved in are:

- Google-Maps interface (APIv3) to automated climate-diagram generation
- Parametric analysis of 2-level Markov chain transitional probabilities for weather
- World-population database with geographic interpolation

2009 to 2010: World Health Organization (WHO), Geneva, CH - Independent Database Administrator (SQL) and Analyst/Developer

My collaboration involved follow-up and maintenance to the multinational post-graduate teaching project that uses the online workflow-driven website I implemented (MySQL with MVC architecture written in Ruby/Rails).

- Application & Database editing & migration (phpMyAdmin, MySQL dumper tools).
- Incident follow-up and resolution coordination.
- Monitoring, logging and pre-emptive problem resolution of user/administrator access.
- Backing up and restoring the database in addition to security oversight (account and IP logging).
- User account creation, management and online support and training.

2003 to 2009: Geneva Foundation for Medical Education and Research (GFMER), Geneva, CH - Informatics Director + Systems Administrator + Analyst/Developer

GFMER was a small multinational research and teaching foundation collaborating with the WHO and Geneva's Faculty of Medicine. My activities involved maintenance and development of the comprehensive database-driven website (20'000 visits/day).

Functional responsibilities:

- Design and development of PHP/MySQL solutions for in-house and client needs.
- Management of the entire development process (collecting user requirements, analysis and client presentations of recommendations and technical requirements, synthesis of semi-functional models and screen captures, contract negotiation, coding/testing/documentation, follow-up, maintenance and user training).
- Development of PHP/JavaScript database driven web applications for multinational studies involving robotic laparoscopy, hepatitis, misoprostol, and cystectomy) for studies in Argentina, Africa, Portugal, and the United States including user and administrator training (local and distance).
- Development of a PHP/MySQL database driven study for a World Health Organization study (A35042) including documentation, edition of "Best Practices" and "Standard operating procedures".
- Installation, site-integration, and maintenance of the Moodle CMS (PHP-based) with the addition of external modules and in-house enhancements (e.g., integration of the authentication mechanism to interface with the medical database authentication mechanism).
- Development of a Ruby/Rails database driven e-learning solution for the WHO (RHLEBM).
- Maintenance and development of the foundation's website including the seamless integration of online forums (customized PHPbb) into the existing website framework.
- IT training to the participating doctors in the post-graduate courses and distance-consulting to assist in setting-up collaborative communication tools (videoconferencing, Skype, VoIP, shared workspaces, virtual networks).
- IT training and manager for temporary staff programmers (PHP driven medical images database).
- Monitoring and optimization of web database services (genetic diseases and medical-images)
- Web visitor analysis installation (Webalizer and Google AdSense).
- Design and implementation of prototype PHP-based services (e.g., AdSense-like revenue generator, automated Excel2DBB database generator, membership database with semi-automated authentication and administrator panels).
- Ensuring incident follow-up, maintenance (backup and recovery), billing for developments.

Development techniques used:

- We used a MVC architecture and in-house PHP templates (some SMARTY) to handle the 12000 documents of the website.
- Code modification started early 2009 to move from PHP 4.2 to 5.2 and from Apache 4.1 to 5.5
- SQL request modifications to move from MySQL 4.2 to MySQL 5.1.
- Installation of a software versioning system – originally CVS, then Subversion, and finally GIT.
- Development was under Windows (XP/Vista) and Mac using MySQL served under an Apache (PHP, JavaScript, CSS, AJAX, FPDF) running in UNIX on the Geneva University hospital UNIX machines. I also moved FileMaker databases on legacy Macs to PHP databases on our server.
- Deployment of software packages, desktop and server installation and deployment, performance monitoring + backup and recovery.
- Web-based data analysis for medical studies (PHP/AJAX/some Excel).
- We exported data using Excel with a JDBC-OBDC data connection to locally stored data imported from the production server; this was encrypted, emailed to the client, and archived.
- For client billing I installed and configured Timesheet.php (Kovacs, Hellers and Gamble).
- For bug tracking, I installed and configured (late 2008) MantisBT (PHP-based).

2001 to 2003: Networkers Interactive, Prévèrenges, CH - Senior Software Architect/Designer (J2EE)
Networkers developed the UNIX-based Internet database-application "Cari" used by the Swiss "Services des Automobiles" (civilian and military).

- Design and implementation with JAVA J2EE, using the Eclipse development environment integrated with the Jakarta Tomcat server
- Design and modification of SQL queries (Oracle 9i) + modifications to table structures
- Development of the pre-visualisation modules (applets, servlets, JSP pages, CSS files, SWING)
- Creation and evolution of a framework for integrating time-contingent managed parameters

1999 to 2001: Charles Veillon, CH – Senior Software Developer and Intranet/Internet Administrator

- Research and implementation of emerging Internet technologies (HTML, XML, CSS, PHP, JSP, ASP, security) for proof-of-concept development projects
- Administration of intranet (Lotus Notes)/extranet (Apache) (Dreamweaver, FrontPage, Fireworks, IIS, PWS, Domino, Tomcat, Apache) and the interface (Java servlets) with LOTUS Notes, Lotus Script, Allaire JRun, some Oracle.

1997 to 1999: EPFL Laboratoire de Télécommunications Lausanne, CH - Senior Researcher

- Designing and teaching the 1st-year course “Introduction to Networks and Protocols” (University level 6th and 7th semester).
- Coordinating and assisting of semester/diploma projects + PhD theses for subjects involving computer-security, computer networking, Internet, telecommunications services, CORBA, object-oriented programming, formal methods/specification, etc.).
- EPFL Project Manager for the European initiative “Trumpet” which involved high-speed computer network security and configuration.
- Principal investigator for Alcatel/Swisscom/Siemens: research in formal methods as applied to emergent behaviour specification and finite state machine reachability analysis.

1993-1997: EPFL, Laboratoire d'informatique technique, Lausanne, CH - PhD and UNIX System Administrator (Solaris, Sparc)

- Using formal methods to study how variations in network data transfer time impact efficiency.
- Teaching assistant for student semester projects + INFO-Industrial-I and Info-Industrial-II courses (Fieldbus networks and distributed systems), including lecturing and exam work.
- Operating System upgrades, installation and configuration of UNIX tools.
- UNIX system security oversight.

1990-1993: EPFL, Laboratoire d'informatique, Lausanne, CH – Researcher and System Administrator

- System Administrator (Sun3, SPARCstations, Macintosh, Windows, Linux) (C++, Perl and Java) including budget, ordering and installation of hardware and software (ADA compilers, C++ compilers, etc.).
- EPFL representative in ISO Proceedings Working Group 7 (creating the international standards document for ODP) Geneva and organizational assistant to the EPFL informatics seminar series.
- Consultant/ System Administrator for EURECOM (Sophia Antipolis) – buying/installing/administrating their first network of SUN workstations for the new 1st semester courses.

1989-1990: University of Waterloo, Dept. of Psychology, Canada – Software Developer

1986-1989: University of Waterloo, Canada – Bachelor of Mathematics (BSc)

1988-1989: Visual-Edge (Engineering Division), Montreal, Canada – Research, development (FORTRAN, MAPLE, Lisp, Prolog) and system administration (Sun, HP, Iris, Windows). Funded by a Canadian Research Grant (CRSNG)

PATENTS:

X. Logean, F. Dietrich, S. Koppenhoefer, J.-P. Hubaux, S. Grisouard, P.-A. Etique, “Monitoring and Testing of Middleware-Based Software Applications”, US patent, June 1999.

OTHER ACTIVITIES:

- Serious amateur photographer.¹
- Founder of two Lausanne associations that promote Argentine tango in Switzerland.²
Expert/Examiner for the Argentine tango branch of the Swiss Federation of Dance.
Member of AMBCTA (*Asociación de Maestros, Bailarines y Coreógrafos de Tango Argentino*), Buenos Aires, since 1991.
- Creator/Developer and Webmaster for the gotan.ch website which originally attracted the attention of TSR1 in 1996 in the show “La marche du siècle” and the Newspaper *Der Spiegel*, 1995.



¹ see <http://photo.shawnkoppenhoefer.com/>

² see <http://www.tangolausanne.ch/>

PUBLICATIONS:

0. S. Koppenhoefer, "Lancer votre propre site web", *Psd Photoshop Magazine*, hors-série, No. 2/2008, ISSN 1734-7297. pp. 46-48.
1. Charles-Henry Rochat, M. Meriardi, J. Harris-Requejo, R. Kulier, S. Koppenhoefer, A. Campana, "A Web-Based Collaborative Database for Monitoring Fistula Patients: Clinical and Public Health Significance", *Geneva Foundation for Medical Education and Research*, March 2007
2. F. Dietrich, X. Logean, S. Koppenhoefer, J.-P. Hubaux, "Modelling and Testing Object-Oriented Distributed Systems with Linear-Time Temporal Logic", *Concurrency and Computation: Practice and Experience*, May 2001 (TR No. SSC/1998/011 March 1998).
3. J.-Y. Le Boudec, J.-P. Hubaux, C. Gbaguidi, S. Koppenhoefer, "Monitoring and Testing of Middleware-Based Software Applications", US patent, June 1999.
4. C. Gbaguidi, J.P. Hubaux, S. Koppenhoefer, J.Y. Le Boudec. "The Impact of the Internet on Telecommunication Architectures", *Computer Networks and ISDN Systems*, special issue on Internet telephony, February 1999, Vol. 31, No. 3.
5. F. Dietrich, X. Logean, S. Koppenhoefer, J.-P. Hubaux, "Testing Temporal Logic Properties in Distributed Systems", *Testing of Communicating Systems: Proceedings of the 11th International Workshop on Testing of Communicating Systems (IWTC98)*, Kluwer Academic Publishers.
6. F. Dietrich, X. Logean, S. Koppenhoefer, J.-P. Hubaux, "Middleware Support (CORBA) for Monitoring and Testing Multimedia Services", *Proceedings of Middleware 98 International Workshop*, England, September 1998.
7. S. Koppenhoefer, "A Formal Synchronous Model for Time-Critical Control Systems", PhD thesis, Swiss Federal Institute of Technology, Lausanne, Switzerland, December 1996.
8. S. Koppenhoefer, L. Ruiz, "Predicting Dispersion in Distributed Automatic Control Systems", *Proceedings of INFONOR96*, Antofagasta, Chile, November 1996.
9. S. Koppenhoefer, J.-D. Decotignie, "Formal Verification for Distributed Real-Time Control: a Periodic Producer/Consumer", *Proceedings of the 2nd IEEE International Conference on Engineering of Complex Computer Systems*, Montreal, Canada, October 21-25, 1996, pp. 230-238.
10. L. Ming, S. Koppenhoefer, "Real-Time Performance Analysis in a Simplified Timed Token Protocol", *Proceedings of the International Conference on Multimedia Technology*, Hong Kong, Baptist University, China, December 11-14, 1996.
11. S. Koppenhoefer, J.-D. Decotignie, "Parameter-Analysis in Industrial Integrated Communication and Control Systems", *Proceedings of the 1st IEEE International Conference on Industrial Engineering Applications and Practice*, University of Houston, Houston, Texas, United States, Dec. 4-7, 1996.
12. S. Koppenhoefer, J.-D. Decotignie, D. Auslander, "Fieldbus Based Integrated Communication and Control Systems", *Proceedings of Computational Engineering in Systems Applications, CESA96 IMACS-IEEE/SMC Multiconference*, Lille, France, July 9-12, 1996, pp. 1316-1321.
13. T. Kouthon, S. Koppenhoefer, "On Distribution of Grafcet Software", *Proceedings CESA'96 IMACS-IEEE/SMC Multiconference*, Computational Engineering in Systems Applications, Lille, France, July 9-12, 1996.
14. S. Koppenhoefer, J.-D. Decotignie, "Formalising the Adapted Synchronous Model", *Proceedings of the 14th IASTED International Conference on Applied Informatics*, Innsbruck, Austria, February 20-22, 1996, pp. 303-307.
15. P. Castori, S. Koppenhoefer, "The Reader-Writer Problem Revisited with MMS", *Proceedings of the 14th IASTED International Conference on Applied Informatics*, Innsbruck, Austria, February 20-22, 1996.
16. K. Vijayananda, S. Koppenhoefer, "A Timed-Automaton Model of Communication Protocols for Model-Based Diagnosis", *Proceedings of the 14th IASTED International Conference on Applied Informatics*, Innsbruck, Austria, February 20-22, 1996, pp. 220-223.
17. S. Koppenhoefer, "Dining Philosophers, Time, and LOTOS", *Proceedings of the IASTED International Conference on Modelling and Simulation*, Colombo, Sri Lanka, July 26-28, 1995, pp. 83-87.
18. S. Koppenhoefer, "Algorithmic Synthesis of Control Compensators", *Proceedings of the IEEE International Symposium on Industrial Electronics*, Athens, Greece, July 10-14, 1995, pp. 332-337.
19. S. Koppenhoefer, "Formal-Model Based Performance Evaluation in Distributed Systems", *Proceedings of the 13th IASTED Conference on Applied Informatics*, Innsbruck, Austria, January 10-14, 1995, pp. 211-213.
20. Draft: S. Koppenhoefer, L. Buttyan, "A Distributed Authorisation Service for Mobile Users", 1998.
20. Draft: S. Koppenhoefer, L. Buttyan, "Authentication-logics & Petri Nets for Protocol Analysis", 1998.