Jochen Behrens, Ph. D.

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Education:

June 1997 — **Doctor of Philosophy**, Computer Science

9/92 – 6/97 — Doctoral program in Computer Science, University of California, Santa Cruz.

Dissertation work on distributed routing algorithms for very large networks. This work involved design, development and performance evaluation of a new class of routing algorithms, which is refered to as link-vector algorithms, and an algorithm to validate link-state updates. It also included the application of these algorithms to hierarchical topologies and performance evaluation of the resulting protocol.

September 1992 — **Diplom** in Informatik (equivalent to M.S. in Computer Science).
Overall grade: excellent

10/87 – 9/92 — Studies in Informatik (Computer Science) at RWTH Aachen

- Emphasis on software engineering and on parallel processing.
- Minor: Operations Research.
- Thesis work at research center KFA Jülich: Mathematical description of algorithms for nonlinear optimization and their implementation on Cray supercomputers.

Experience:

4/97 – present — **Member of Technical Staff**, Sun Microsystems, Inc.
Involved in design and implementation of new switch / routing technology. Designed and implemented systems software for managed network appliance.

4/93 – 6/97 — **Research Assistant**, UCSC.
Worked on algebraic specification and on the deployment of a radio network in the Monterey bay region for the REINAS (Real-time Environmental Information Network and Analysis System) project.
Extensive work on routing algorithms for large internetworks, including hierarchical routing protocols. Implemented OSPF and LVA based protocols in Rooftop's CPT, which facilitates simultaneous development of simulation and embedded code.

Fall 92, Winter 93, Fall 95	**Teaching Assistant**, UCSC. Assisted in teaching one lower and two upper division Computer Science classes. Lead discussion sessions, graded homework and exams, and held lectures.
1/92 – 9/92	**Research Assistant**, Central Institute for Applied Mathematics (ZAM,) Forschungszentrum Jülich (KFA). Implemented parallel versions of optimization algorithms on Cray supercomputers.
1987 – 1992 and 1985	Work in parental perennials nursery. • Maintained business computer. • Applied sales and customer contact skills. • Supervised employees in sales and production.
10/85 – 12/86	**Military Service:** Hochgebirgsjägerzug Edelweiß, Mittenwald. (Elite unit of German mountain troops.)

Skills:

Simulation Environments: Opnet, CPT
Programming Languages: Ada, C, C++, Fortran, Java, Modula-2, Pascal, Prolog
Operating Systems: Unix, BSDI, Unicos, DOS/Windows, VM/MVS

Publications:

J. Behrens and J.J. Garcia-Luna-Aceves, "Hierarchical Routing Using Link Vectors," *Proc. IEEE INFOCOM 98,* San Francisco, California, March 29-April 2, 1998.

Jochen Behrens, *"Distributed Routing for Very Large Networks Based on Link Vectors,"* PhD Thesis, Computer Science, University of California, Santa Cruz, CA 95064, June 1997.

J. Behrens and J.J. Garcia-Luna-Aceves, "Fast Dissemination of Link States Using Bounded Sequence Numbers with no Periodic Updates or Age Fields," *Proc. ICDCS'97 International Conference on Distributed Computing Systems,* Baltimore, Maryland, May 27 - 30, 1997.

J.J. Garcia-Luna-Aceves and J. Behrens, "Distributed, scalable routing based on vectors of link states," *IEEE Journal on Selected Areas in Communications*, vol. 13, (no. 8):1383-95, October 1995.

J. Behrens and J.J. Garcia-Luna-Aceves, "Distributed, scalable routing based on link-state vectors," (ACM SIGCOMM '94, London, Aug./Sept. 1994,) *Computer Communication Review,* October 1994, vol.24, (no.4):136-47.

Jochen Behrens, *"Parallele Algorithmen zur nichtlinearen Optimierung – Mathematische und algorithmische Beschreibung einiger Verfahren und ihre Implementation auf CRAY-Rechnern,"* Forschungszentrum Jülich, Bericht Jül-2705, December 1992

Professional Affiliations:

Member Gesellschaft für Informatik (GI)
Member ACM, ACM SIGCOMM
Member IEEE, IEEE Computer Society and IEEE Communications Society