

CURRICULUM VITAE

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Education

B.S. in Mathematics, 1969, Louisiana State University.
M.S. in Computer Science, 1986, The University of Texas at Austin.
Ph.D. in Computer Science, 1991, The University of Texas at Austin.

Employment History

- Manager of Black Rock Municipal Airport (88NV): <http://airport.burningman.com>, Jan 2013-Jan 2017. Developed small private airport into a major commercial point of entry into the event.
- University of St. Gallen, Design Research Informatics, Guest Professor, Feb-Oct 2012.
- Karlsruhe Technology Institute (KIT), Services Research Institute (KSRI), Guest Professor, Feb-Oct 2012.
- Stanford Computer Science Department, Senior Research Scientist, 2002-2004, 2006-2011. Research projects with DARPA, NEC, Intec Web and Genome, HP, and SAP.
- Stanford Networking Research Center, founding Executive Director, 1999-2004. Staff Scientist, 2004-2005. Largest affiliate research institute in Stanford School of Engineering.
- Stanford University Center for Design Research, 1993. Sr. Research Scientist, 1993 to 1999, 2005-2006. Consulting Professor, 2005-2007. Developed the *Redux* model of design and the *ProcessLink* and *JATLite* agent systems. Developed and worked on DARPA grants and lectured at the VW AutoUni.
- Microelectronics & Computer Technology Corp. (MCC), 1984 to 1993. Sr. MTS and Project Leader. Research interests: hybrid inference architectures, truth maintenance, distributed design and planning resulting in the *Proteus* project: MCC's first commercial success.
- Sperry Corporation, 1978 to 1984. Systems Analyst, Manager, and Sales. Mainframe performance analysis, seismic processing benchmarks, and custom software.
- Solar Research Inc., Austin, 1974 to 1978. Engineer and Programmer.
- US Army - 142nd MPs, 1970-1971. Sergeant

Consulting

- 2013-2015 University of St. Gallen, Design Thinking projects consultant.
- 2012-2013 Ropes & Gray
Expert Witness for Toyota vs Versata.

- 2011-2012 Belsky & Associates
Expert witness for UC Regents vs Husic.
- 2011 Melveny & Myers, San Francisco
Expert witness for Autonomy vs Adiscov.
- 2010-2011 Schmidt, LLC, NY, NY
Expert witness for CBS vs SAP.
- 2010 HPI Potsdam, Germany. Review of academic output of the Enterprise Platform and Integration Concepts research group.
- 2007-2009 Day, Casebeer, Madrid, and Batchelder, LLP, Cupertino, CA.
Expert witness reports and testimony for SAP vs Versata.
- 2007-2008 Semantic Technologies Institute, Innsbruck, Austria.
Semantic Web Service Challenge Organization and academic technology review.
- 2007-2008 Unpaid Adviser to the SAP SOA Community Advisory Group.
- 2006 Digital Enterprise Research Institute, Galway, Ireland.
Semantic Web Service Challenge Organization
- Consulting prior to 2006 with DaimlerChrysler, Volkswagen, Siemens, HP, CommerceNet, and Commerce One.

Founder

- Founding manager: MCC AI Lab first project, *Proteus*, under Woody Bledsoe. First project to deliver technology with a commercial application.
- *IEEE Internet Computing*. Founding EIC: first Computer Society magazine with complete articles online and most popular optional magazine in the Computer Society.
- *Stanford Networking Research Center*. Founding Executive Director.
- *Semantic Web Services Challenge*. Founding Director: first initiative to objectively test web service technologies on common scenarios.

Member:

American Association for Artificial Intelligence, IEEE Computer Society, Association for Computing Machinery

Program Committees:

RuleML Challenge, Ft. Lauderdale, FL, USA, 3-5 Nov 2011, IEEE APSCC Workshop on Semantics, Services and Applications (SSA 2011) (Co-Chair) Rule ML Challenge 2011 (Co-Chair), THESUES Workshop on Service Description Languages 2010 (Co-Chair), Semantic Web Services Challenge Workshop 2006-2009 (Chair), it Nectar track of AAAI-2006, Web Services-based Systems and Applications 2006, ICEIMT-04 (Steering), 1st Internat. Conf. on Service Oriented Computing, The Montreal Conference on e-Technologies 2006-2008, Knowledge Management for Distributed Agile Processes (KMDAP2003/2004), Web Services, e-Business, and the Semantic Web (WES), AID 02 Workshop on Semantic Web Technology for Intelligent Design and Engineering Support, Workshop on Web Services and e-Business Technology, Business Information Systems 2002, Workshop on Web Services, e-Business, and the Semantic Web 2002, Engineering of e-Business Applications 2001, ASA'99, Intelligent Workflow and Process Management (IJACI-99 Workshop), Agent-Based Systems in the Business Context (AAAI-99 Workshop), IEEE Joint Symposium on Agent Systems and Applications (ASA'99), WETICE-99. *Program Chair*: First International Conference on Enterprise Integration (EI) Modeling Technology. *Chair*

or co-Chair: The First International Conference on Service-Oriented Computing 2003, WWW2003 Workshop Emerging Applications for Wireless and Mobile Access 2003, Semantic Web 2001, IATA-99, IATA-98, WETICE-98, WETICE-96 1992 AAAI Workshop on AI in EI, 1994 CAIA Workshop on Coordinated Design and Planning. Organizer: SPIE-96 Plug&Play Software Conference, AAA-97 Workshop on Constraints and Agents.

Journal Reviewing: *Artificial Intelligence, AI Magazine, IEEE Expert, CERA, AIEDAM, Data and Knowledge Engineering Journal.*

Invited Speaker: DOM 5 2012 Linz, Strategisches IT-Management 2012 Munich, IEEE Semantic Web Services in Practice (SWSIP 2009), Semantic Matchmaking 2007, CONQUEST 2007, Conference on e-Technologies 2005, CRIM (Montreal) 2004, Net.ObjectDays 2003, Business Services Registry 2003, AAAAI Spring Symposium on Agent-mediated Knowledge Management 2003, Seamless Mobility 2001, Real-time Enterprise Realization through Web Services, Berkely Haas School of Business 2002, PAAM 2000, IEEE Symposium on Application-Specific Systems and Software Engineering Technology (ASSET'99), Internet Gulf 1998 (Dammam), Internat. Conf. on Multi-Agent Systems (ICMAS, Paris) 1998, INFORMS Computer Science and Operations Research '98 (Monterey), Workshop for the Graduate School of Distributed Information Systems'97 (Berlin/Brandenburg), 1996 SIGMAN (Phoenix), XPS-95 (Kaiserslautern), AID'94 Conflict Management (Lausanne).

Editor: *IEEE Internet Computing:* 1996-1998 Founding Editor-in-Chief; current Editorial Board Member; Editor of "Peering" column, Guest Editor of Special Issues on Future Internet Protocols (November, December 2012), Patient Health Records (July/August 2011), Business Processes on the Web (Jan/Feb 2004), Mobile Applications (March/April 2003), Internet-Based Workflow (May/June 2000).

Autonomous Agents and Multi-Agent Systems: current Editorial Board Member.

CERA: Guest Editor 1995.

Patent: 5,509,071, with Wayne Allen, on using encryption for non-repudiation of delivery of software on the Internet, filed 1 April 1994 by MCC.

Refereed Papers

"Web Service Composition", Springer Computer Science Books, March (2016) ISBN: 978-3-319-32831-7 (978-3-319-32833-1 for e-book).

"How Deutsche Bank's IT Division Used Design Thinking to Achieve Customer Proximity" with C. Vetterli, F. Uebernickel, W. Brenner, and D. Stermann. In *MIS Quarterly Executive* 15:1 March (2016).

"User, Use & Utility Research : The digital user as new design perspective in Business & Information Systems Engineering" with W. Brenner, D. Karagiannis, L. Kolbe, J. Krüger, H. Lamberti, L. Leifer, J. Leimeister, H. Österle, H. Plattner, G. Schwabe, F. Uebernickel, R. Winter, and R. Zarnekow. *Business & Information Systems Engineering BISE* (2014) 1 pp. 55:61. DOI 10.1007/s12599-013-0302-4

"Automated Configuration Problem Solving", Springer Briefs in Computer Science, 2012. DOI 10.1007/978-1-4614-4532-6.

"Semantics for Smart Services," with A. Hochstein and M. Genesereth. In H. Demirkan, J.C. Spohrer and V. Krishna (eds.), *The Science of Service Systems*, New York: Springer, 2011.

"Enterprise Coordination on the Internet," *Future Internet* 3(1), p. 49-66; doi:10.3390/fi3010049, 17 February 2011.

"Planning Process Instances with Web Services," *Proc. ICEIS*, 31:41, Springer; dx.doi.org/10.5220/0002171400310041, May 2009.

"Semantic Email Addressing: The Killer App?," with M. Kassoff, A. Zen, and M. Genesereth, *IEEE Internet Computing*, 13:1, 2009.

Semantic Web Services Challenge: Results from the First Year book with T. Margaria, H. Lausen, and M. Zaremba (Eds.), Springer Series: *Semantic Web and Beyond* , 8, 2009, XXII, 290 p., ISBN: 978-0-387-72495-9.

“On the Evaluation of Semantic Web Service Frameworks,” with U. Künster, B. König-Ries, M. Klusch, *Internat. Journal on Semantic Web and Information Systems*, bf 4:4, IGI Publishing 2008, pp 31-55.

“Using Object-Oriented Constraint Satisfaction for Automated Configuration Generation,” with Sahai et al., *Lecture Notes in Computer Science*, **3278** p. 159, Springer-Verlag Heidelberg, November 2004. Also available at <http://logic.stanford.edu/Sharing/papers/OOCS.pdf>.

“Distributed Coordination of Project Schedule Changes using Agent-based Compensatory Negotiation”, with Kim et al., accepted for publication in *AIEDAM*, 2003.

“Trust-Based Facilitator: Handling Word-of-Mouth Trust for Agent-Based E-Commerce”, with Ono et al., *Journal of Electronic Commerce Research*, **3** (3-4) pp. 478-486, July - October 2003, pp. 201-220.

“Service Agents and Virtual Enterprises: A Survey”, with C. Bussler, *IEEE Internet Computing*, **7**(4), July/August, 2003, pp. 2-12.

“Facilitator Agent Based on Word-of-Mouth Trust”, with Ono et al., *IPSJ Journal*, **43**(2) pp. 478-486, February, 2002.

“Agent-Based Software Engineering”, *Agent-Oriented Software Engineering*, Eds P Ciancarini and M. Wooldridge, *Lecture Notes in AI 1957*, Springer-Verlag, 2001, pp 58-76.

“JATLite: A Java Agent Infrastructure with Message Routing”, with H. Jeon and M. Cutkosky, *IEEE Internet Computing*, **4** May/June 2000.

“Agent-Based Project Management”, *Lecture Notes in AI 1600*, Springer-Verlag, 1999.

“Combining Constraint Propagation and Backtracking for Distributed Engineering”, with H. Jeon and M. Cutkosky, AAA’97 Workshop on Constraints and Agents, July 1997, AAAI Press. Versions also presented at ECAI-96 Workshop on Non-Standard Constraint Processing, Budapest, August, 1996, and at the Workshop on Constraint Reasoning on the Internet, part of CP’97, Schloss Hagenberg, Austria, 1 November 1997.

“Agent-Based Engineering, the Web, and Intelligence”, *IEEE Expert*, **11**:6, pp. 24-29, December, 1996.

“Using Pareto Optimality to Coordinate Distributed Agents”, with T. Webster and M. Cutkosky, *AIEDAM*, **9**, 269-281, 1995.

“Design Space Navigation as a Collaborative Aid,” *Proc. AI in Design: 3rd Internat. Conf.*, pp. 611-623, Lausanne, August, 1994.

“The Redux’ Server,” *Proc. Internat. Conf. on Intelligent and Cooperative Information Systems (ICICIS)*, Rotterdam, May, 1993. Also MCC TR EID-001-93.

“Constrained Decision Revision,” *Proc. AAAI-92*. Also MCC TR EID-414-91.

“Context Maintenance”, *Proc. AAAI-91*, pp. 288-295. Also MCC TR ACT-RA-364-90.

“A New Notion of CSP Equivalence”, with F. Rossi and V. Dhar, *Proc. ECAI-90*, Stockholm, August, 1990.

“Using a TMS for Problem Formulation”, *Proc. IJCAI-89 Workshop on Constraint Processing*, Cognitive Systems Lab, UCLA, 1989. Also MCC TR ACT-AI-341-89.

“Reason Maintenance in Expert Systems”, *Kuenstliche intelligenz*, **2**(89):54-60, 1989.

“Controlling Forward Rule Instances”, with M. Huhns, *Proc. 8th Internat. Workshop Expert Systems and Applications*, Avignon, pp. 383-398, 1988. Also MCC TR AI-012-88.

“Dependency-Directed Backtracking Revised for Default Reasoning”, *Proc. AAAI-87*, pp. 167-172. Also MCC TR AI-002-87.

“A Diffusing Computation for Truth Maintenance”, *Proc. IEEE 1986 Internat. Conf. on Parallel Processing*, pp. 691-695. Also MCC TR AI-016-86.

“Extraction of Expert System Rules from Text”, *Proc. IEEE Second Conference on AI Applications*, pp. 229, 1985. Also MCC TR AI-017-85.

Invited Talks, Papers

See collection of short articles at:

<http://www-cdr.stanford.edu/~petrie/online/peer2peer/index.html>

“The Future of the Internet is Coordination,” 2010, 1st International Future Enterprise Systems Workshop (FES2010). Available at <http://logic.stanford.edu/talks/FES2010> . Associated keynote talk: “Future

of the Internet: Coordinating Collective Work” at <http://www.it-jahrestagung.de/> target=”main”
Strategic IT-Management; Sofitel Munich Bayerpost, München, 23-25 January 2012. Available at <http://logic.stanford.edu/talks/HandelsblattJan12/>.

“Practical Web Services,” 2009, IEEE Semantic Web Services in Practice (SWSIP 2009) Workshop. Available at <http://logic.stanford.edu/talks/practicalws/>.

“Semantic Web Services,” 2007, Fourth Intl. Workshop on Semantic Web for Services and Processes.

“Semantic Futures,” 2007, Semantic Matchmaking workshop. Available at <http://logic.stanford.edu/talks/semantic-futures>.

“World-Wide Wizard,” 2005, Montreal Conference on e-Technologies. Available at <http://logic.stanford.edu/talks/Wizard/>.

“Dynamic Web Service Integration,” 2004, first presented at DERI (Ireland). Available at <http://logic.stanford.edu/talks/DynamicWS/>.

“Emergent Collectives for Work and Play,” *AGIR Revue Générale de Stratégie*, vols. 20-21, La société de l’information, Jan. 2005, pp. 146-152.

“Adding AI to Web Services”, *Lecture Notes in AI*, Springer-Verlag 2004, also invited talk at AAAI Spring Symposium, 2003.

“Web Services, Business Processes, and Computational Logic”, 2003, presented in Stanford CS 204, Winter quarter. Available at <http://logic.stanford.edu/talks/CS204-Petrie/>.

“Agent-Based Software Engineering”, *Proc. PAAM 2000*, Manchester, April, 2000. Also available at <http://www-cdr.stanford.edu/~petrie/agents/abse/abse.html>.

“Agent-Based Process Management”, *Proc. of the Intl. Workshop on Intelligent Agents in CSCW*, Deutsche Telekom, Dortmund, Sept. 1998, p. 1-17.

“Internet Futures”, IEEE Symposium on Application-Specific Systems and Software Engineering Technology (AS-SET’99)

“Electronic Commerce and Agent Realities”, presented at IATA, ICMAS 1998.

“1998: Time of the Internet”, keynote at *Internet Gulf 1998*, Dammam, Saudi Arabia, 1998. (<http://cdr.stanford.edu/~petrie/persian/>)

“Coordination of Distributed Engineering by ProcessLink”, *EAGL Project Report (Engineering Adventure Group Linkage Program)*, Japan, 1997, Part2 pp.459. See <http://cdr.stanford.edu/ProcessLink/papers/osaka/J-PLink.ps>.

“Internet-based Design Project Coordination”, presented at in Berlin and at CERN, 1997. (See <http://cdr.stanford.edu/ProcessLink/talks/wulkow/>)

“Formalizing Distributed Concurrent Engineering”, SIGMAN, 1996. (See <http://cdr.stanford.edu/ProcessLink/talks/DistrConcurEng.html>)

“The Next-Link Architecture for Distributed Design”, XPS-95, Kaiserslautern, March, 1995.

“Next-Link: An Experiment in Coordination of Distributed Agents”, AID-94 Workshop on Conflict Management, Lausanne, August, 1994.

“A Minimalist Model for Coordination”, AAAI-92 Workshop on Design Rationale. Also in *Enterprise Intergration Modeling*.

Enterprise Intergration Modeling, editor, MIT Press, October, 1992.

“REDUX”, AAAI-92 Spring Symposium on Computational Support of Incremental Modification, March, 1992.

“What’s Wrong with Truth Maintenance”, panel, *Vol. 2 Proc. 7th IEEE Conf. on AI Applications*, February, 1991, Miami.

“Scheduling with REDUX: A Technology for Replanning”, *Proc. Aerospace Applications of AI*, October, 1990, Dayton. Also MCC TR ACT-RA-340-90.

“CSP Equivalence”, *Proc. Workshop on Constraint Directed Reasoning*, AAAI, July, 1990.

“Reason Maintenance in Expert Systems”, *Kuenstliche Intelligenz*, Vol 2/89, June 1989, pp. 54-60. (German AI Magazine.) Also MCC TR ACA-AI-021-89.

“Using Truth Maintenance in Planning”, talk given at Siemens, FAW, and DFKI in Germany, January, 1989.

“Artificial Intelligence Research at MCC: A 1988 Snapshot”, *Proc. 4th Internat. Expert Systems Conference*, June 1988, pp. 231 - 239.

“Proteus: A Default Reasoning Perspective”, with D. Russinoff and D. Steiner, invited talk in *Proc. 5th Generation Systems*, Inst. for Software, October, 1986. Also MCC TR AI-352-86.

Technical Reports

“Compensatory Negotiation for Agent-Based Project Schedule Optimization and Coordination,” with Keesoo Kim, Boyd C. Paulson, Jr., and Victor R. Lesser, Stanford CIFE WP 055, January, 2000.

See http://www.stanford.edu/group/CIFE/online_publications/wp55.pdf

“Planning and Replanning with Reason Maintenance,” UT Dissertation, December, 1991. Also MCC TR EID-385-91.

“REDUX: An Overview,” MCC TR ACT-RA-314-90, October, 1990.

“RAD: A Hybrid and Distributed Reasoning Tool,” project group report, MCC TR ACT-RA-075-90-Q, , February, 1990. Overview - ACT-RA-098-90, March, 1990.

“On the Equivalence of Constraint Satisfaction Problems”, with F. Rossi and V. Dhar, MCC TR ACT-AI-222-89.

“A Structure-based Circuit Verification/Synthesis Application”, MCC TR AI-336-89-P.

“Revisable Academic Course Scheduling: A Planning Problem”, with V. Dhar, D. Steiner, and R. Causey, MCC TR ACT-AI-020-89.

“Implementing Mapping Units with PDP Constraint Satisfaction”, MCC TR ACA-AI-020-89.

“Proteus 2: System Description”, with D. Russinoff and D. Steiner, MCC TR AI-136-87.

“A Knowledge-based Contradiction Resolution Mechanism”, MCC TR AI-270-86-Q.

“Proteus: A Nonmonotonic Inference Engine”, with D. Russinoff and D. Steiner, MCC TR AI/TR-0101-05-P.

“Extended Contradiction Resolution”, MCC TR AI-102-86.

“Using Explicit Contradictions for Explanations”, MCC TR AI/TR-0100-05.

“New Algorithms for Dependency-Directed Backtracking”, (Masters Thesis) University of Texas at Austin, Dept. of Comp. Sci. Technical Report AI86-33.