

## CURRICULUM VITAE

### Charles J. Petrie, Jr.

2309 Rock St. Apt 12  
Mountain View, CA 94043  
(650) 725-0162 work  
(650) 725-8475 fax  
(650) 269-1516 cell  
*petrie@stanford.edu*

*<http://www-cdr.stanford.edu/~petrie/bio.html>*

#### 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

- Stanford Computer Science Department, Senior Research Scientist, 2002-present
- Stanford Mechanical Engineering Department Senior Research Scientist, Consulting Professor, 2005-2007
- Stanford Networking Research Center, founding Executive Director, 1999-2003.
- Stanford University Center for Design Research, 1993. Sr. Research Scientist, 1993 to 1999. Research interests: coordination of distributed design. Developed the *Redux* model of design and the *ProcessLink* and *JATLite* agent systems.
- 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.

#### Founder

- MCC AI Lab first project, *Proteus*, under Woody Bledsoe. First project to deliver technology with a commercial application.
- *IEEE Internet Computing*. First with complete articles online and most popular optional magazine in the Computer Society.

- *Stanford Networking Research Center*. Largest affiliate program founded in the Engineering School of Stanford University.
- *Semantic Web Services Challenge*. Open testing and certification of semantic web services technology.

**Member:**

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

**Program Committees:** Semantic Web Services Challenge (Chair), *Nectar* track of AAAI-2006, ICEIMT-04 (Steering), 1st Internat. Conf. on Service Oriented Computing, 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 Systems2002, 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:** CONQUEST 26-28 September 2007, Potsdam, Germany. Semantic Matchmaking workshop, 11 November, 2007, Busan, Korea, at the Internat. Semantic Web Conference. Fourth Intl. Workshop on Semantic Web for Services and Processes (SWSP07) - 9-13 July 2007, Salt Lake City, Utah. Conference on e-Technologies 2005, CRIM (Montreal) 2004, Net.ObjectDays 2003, Business Services Registry Workshop 2003, AAAAI Spring Symposium on Agent-mediated Knowledge Management 2003, Workshop on 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 workshop (Phoenix), XPS-95 (Kaiserslautern), AID'94 Workshop on Conflict Management (Lausanne).

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

*IEEE Internet Computing:* 1996-1998 Founding Editor-in-Chief; current Editorial Board Member; Guest Editor of Special Issues on 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.

*Enterprise Intergration Modeling*, editor, MIT Press, October, 1992, ISBN: 0262660806.

**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

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

*Semantic Web Services Challenge: Results from the First Year* with Margaria, Lausen, and 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 Kster, Knig-Ries, and Klusch, *Internat. Journal on Semantic Web and Information Systems*, **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.

“Distributed Coordination of Project Schedule Changes using Agent-based Compensatory Negotiation”, with Kim et al., *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.

“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**

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

“Policy/Physics-Oriented Enterprise Management”, CONQUEST 2007. Available at <http://logic.stanford.edu/talks/conquest/>.

“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/>.

“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 Telkom, Dortmund, Sept. 1998, p. 1-17.

“Internet Futures”, IEEE Symposium on Application-Specific Systems and Software Engineering Technology (ASSET’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 Integration Modeling*.

“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.