

# Jean Oh

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## Research Interests

**Artificial Intelligence** and related areas: intelligent systems, machine learning, scheduling, constraint optimization, and human-robot hybrid systems. Interdisciplinary research in health care applications, assistive living technology, transportation, urban planning, and education support systems.

## Education

**Ph.D.**, Language and Information Technologies 05/2009  
**Carnegie Mellon University**, Pittsburgh, PA

Thesis: “Multiagent social learning in large repeated games.”  
Broadly, the idea of learning from others in a society is referred to as *social learning*. Inspired by the notion of social learning, proposed a computational learning model where a large number of self-interested agents learn to make rational decisions with respect to a long-term cost of shared resources. [[pdf](#)]

Advisor: Dr. Stephen F. Smith  
Committee: Dr. Jaime Carbonell, Dr. Manuela Veloso, and Dr. Sarit Kraus

**M.S.**, Computer Science 05/1997  
**Columbia University**, New York, NY

**B.S.**, Biotechnology 02/1993  
**Yonsei University**, Seoul, Korea

## Professional Research Experience

*Postdoctoral research fellow.* Intelligent Software Agents Lab. 06/2009 – present  
**Robotics Institute, Carnegie Mellon University**, Pittsburgh, PA

- To alleviate cognitive overload in dynamically changing environment, designed intelligent information agent that can recognize the user’s information needs; optimize information gathering; and present information in timely and effective manner.
- Developed reasoning agent that can assist coalition team members to improve quality of joint plans by managing planning constraints and policies. Implemented end-to-end prototypes in JAVA.

*Research Assistant.* Intelligent Coordination and Logistics Lab. 09/2002 – 05/2009  
**Robotics Institute, Carnegie Mellon University**, Pittsburgh, PA

- Using statistical machine learning techniques, developed multiagent negotiation algorithm for oversubscribed resource scheduling problem in JAVA & Common Lisp.
- Designed and implemented adaptive personal calendar scheduling agent that learns scheduling time preferences by observing a series of user’s scheduling episodes.

*Collaborator.* Intelligent Urban Planning, Graduate School of Design 09/2005 – 01/2009  
**Harvard University** and **Northeastern University**, Cambridge, MA

- Developed application of machine learning to identify potential commercial districts for revitalization in Boston area. Implemented single-linkage clustering algorithm and an active learning algorithm using Support Vector Machines in JAVA.

*Research Scientist.* Intelligent Systems Division, 12/1997 – 08/2002  
**University of Southern California / Information Sciences Institute**, Marina del Rey, CA

- Designed and implemented hierarchical information integration system in travel planning domain where information agents extract data from heterogeneous information sources including WWW and databases.
- Developed agents that monitor dynamically changing information to assist users to handle sudden change of plan during execution time.
- Developed SQL front-end for WWW information extraction wrappers.
- Co-authored C++ version of information system integrating heterogeneous information sources from both local and remote servers.

*Member of Technical Staff I / Intern.* 06/1996 – 05/1997  
**Bell Labs., Lucent Technologies**, Murray Hill, NJ

- Designed and implemented research prototypes for multi-user online collaboration software and multimedia information server.

*Programmer (part-time).* Teachers College, 09/1995 – 05/1996  
**Columbia University**, New York, NY

- Developed online multimedia distance learning system for Dante's Divine Comedy using Unix ndbm database system.

### *Professional Activities*

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Program committee.	The Tenth International Conference on Autonomous Agents and Multiagent Systems	May 2011
Co-chair.	AAAI Fall Symposium Series, Proactive Assistant Agents	Nov 2010
Program committee.	The Twenty-Fourth AAAI Conference of Artificial Intelligence	Jul 2010
Program committee.	The Twelfth International Conference on Principles of Practice in Multi-Agent Systems	Dec 2009
Reviewer.	University of Mauritius Research Journal	Sep 2009

### *Publications*

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#### *[Book Chapters]*

**J. Oh**, J.E. Hwang, S. F. Smith, and K. Koile. "Learning from Main Streets: A machine learning approach identifying neighborhood commercial districts," in *Innovations in Design & Decision Support Systems in Architecture and Urban Planning, Part 4*, Springer Netherlands, 2006, pp. 325-340 [[pdf](#)]

**J. Oh** and S. F. Smith. "Learning user preferences in distributed calendar scheduling," in *Practice and Theory of Automated Timetabling V, Lecture Notes in Computer Science*, vol.3616,

Springer, 2005, pp. 3-16. (A version appeared in *Proc. of the Fifth International Conference for the Practice and Theory of Automated Timetabling*, 2004.) [[pdf](#)]

P. J. Modi, M. Veloso, S. F. Smith, and **J. Oh**. "CMRadar: A personal assistant agent for calendar management," in *Agent Oriented Information Systems II. Lecture Notes in Computer Science*, vol. 3508, Springer, 2005, pp. 169-181. [[pdf](#)]

[*Conference Proceedings*]

**J. Oh**, F. Meneguzzi, K. Sycara, and T. J. Norman, "An agent architecture for intelligent information assistance," in *Proc. of the Fourth Conference of the International Technology Alliance*, 2010 (a version appeared in *Proc. of the Nineteenth European Conference on Artificial Intelligence*, 2010)

F. Meneguzzi, **J. Oh**, and K. Sycara, "Intelligent information assistance for coalition operations," in *Proc. of the Sixth International Conference on Knowledge Systems for Coalition Operations*, 2010 (to appear)

**J. Oh** and S. F. Smith, "A few good agents: Multi-agent social learning," in *Proc. of the Seventh International Joint Conference on Autonomous Agents and Multiagent Systems*, 2008, pp. 339-346. [[pdf](#)]

E. Fink, P. M. Jennings, U. Bardak, **J. Oh**, S. F. Smith, and J. G. Carbonell. "Scheduling with uncertain resources: Search for a near-optimal solution," in *Proc. of the IEEE International Conference on Systems, Man, and Cybernetics*, 2006, pp. 137-144.

J. L. Ambite, G. Barish, C. A. Knoblock, S. Minton, M. Muslea, and **J. Oh**. "Getting from here to there: Interactive planning and agent execution for optimizing travel," in *Proc. of the international Conference of Innovative Application of Artificial Intelligence*, 2002, pp. 862-869.

C. A. Knoblock, S. Minton, J. L. Ambite, M. Muslea, **J. Oh** and M. Frank. "Mixed-initiative, multi-source information assistants," in *Proc. of the Tenth International World Wide Web Conference*, 2001, pp. 697-707.

C. A. Knoblock, J. L. Ambite, S. Minton, C. Shahabi, M. Kolahdouzan, M. Muslea, **J. Oh**, and S. Thakkar. "Integrating the world: The Worldinfo Assistant," in *Proc. of the International Conference on Artificial Intelligence (IC-AI)*, 2001.

Martin Frank, M. Muslea, **J. Oh**, Steve Minton, and Craig Knoblock. "An intelligent user interface for mixed-initiative multi-source travel planning," in *Proc. of the ACM International Conference on Intelligent User Interfaces*, 2001, pp. 85-86.

[*Short papers*]

**J. Oh**, F. Meneguzzi, and K. Sycara, "Probabilistic plan recognition for intelligent information agents" in *Proc. of the Third International Conference on Agents and Artificial Intelligence*, 2011 (to appear).

P. J. Modi, M. Veloso, S. F. Smith, and **J. Oh**. "CMRadar: A personal assistant agent for calendar management," in *Proc. of the Nineteenth National Conference on Artificial Intelligence*, 2005, pp. 1020-1021.

[*Workshops and Symposia*]

**J. Oh**, J.E.Hwang, and S. F. Smith. "Agent technologies for post-disaster urban planning," in *Proc. of the First International Workshop on Agent Technology for Disaster Management*, 2006.

**J. Oh** and S. F. Smith. "Calendar Assistants that Learn Preferences," in *Persistent Assistants: Living and Working with AI*, AAI Spring Symposium, 2005.

[*Magazine Articles*]

H. Chalupsky, Y. Gil, C. A. Knoblock, K. Lerman, **J. Oh**, D. V. Pynadath, T. A. Russ, and M. Tambe. "Electric elves: Agent technology for supporting human organizations," *AI Magazine*,

vol. 23, no. 2, pp. 11-24, Summer 2002. (A version appeared in the *Proc. of the International Conference of Innovative Application of Artificial Intelligence*, 2001.) [[pdf](#)]

[*Unpublished Working Papers*]

**J. Oh**, F. Meneguzzi, K. Sycara, and T.J. Norman. “Prognostic agent assistance for norm-compliant coalition planning,” 2011 (under review).

**J. Oh** and S.F. Smith. “Learning to behave rationally in repeated games”, 2010.

### Skills

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Programming tools	<b>Java</b> (proficient), <b>C/C++</b> (proficient), Common Lisp, Python, Matlab, HTML, XML, LaTeX, JavaScript, Unix Shell Script, JavaCC, flex++/bison++
Environment	Cygwin bash, Emacs/Xemacs, Eclipse, cc/gcc, g++, gdb, Visual C++
Languages	English, Korean

### Teaching Experience

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<i>Teaching Assistant.</i> Carnegie Mellon University <b>Artificial Intelligence, undergraduate level</b>	Spring 2008
<i>Teaching Assistant.</i> Carnegie Mellon University <b>Advanced Artificial Intelligence, graduate level</b>	Spring 2005

### Selected Graduate Courses

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<i>Carnegie Mellon University, Pittsburgh, PA</i> Advanced Artificial Intelligence, Planning Execution and Learning, Machine Learning, Information Retrieval, Grammars and Lexicons, Software Engineering, Algorithms for Natural Language Processing	2002 – 2005
<i>Columbia University, New York, NY</i> Artificial Intelligence, Algorithms, Programming Languages & Translation, Computer Networks, Databases, Object-Oriented Programming in C++	1994 – 1996

### Other Activities

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<i>Judge.</i> Meeting nightmare contest, Doodle.com	2010
<i>Conference student volunteer and scholarship recipient.</i> The Seventh International Joint Conference on Autonomous Agents and Multiagent Systems, Estoril, Portugal	2008
<i>Research Judge.</i> The Seventh Annual FIRST LEGO League Tournament The National Robotics Engineering Center, Pittsburgh, PA	2006
<i>Organizer for weekly research seminars.</i> Intelligent Coordination & Logistics Laboratory, Carnegie Mellon University, Pittsburgh, PA	2004 – 2005
<i>Volunteer Korean language teacher.</i> Alphabet Tree Kindergarten and Hartwood Elementary School, Pittsburgh, PA	2002 – 2003
<i>Violinist / Vice president</i> (managed two bi-annual concerts). Yonsei University Amateur Orchestra, Seoul, Korea	1989 – 1993

**REFERENCES: FURNISHED UPON REQUEST.**