

CURRICULUM VITAE

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Date of Birth: July 17, 1953. Kyoto, Japan.

EMPLOYMENT HISTORY

- 1998-present: *Full Professor* (April 1998), Department of Social Informatics, Kyoto University.
- 2008- present: *Visiting Professor*, National Institute of Informatics.
- 2006-present: *Project Leader* (April 2006 - March 2011), Language Grid, National Institute of Information and Communications Technology.
- 2002-2009: *Guest Professor* (December 2002 - November 2005, February 2006 - January 2009), Shanghai Jiao Tong University.
- 2006 summer: *Visiting Professor* (August 2006 - September 2006), Computer Science and Technology Department, Tsinghua University.
- 1998-2005: *Research Professor* (October 1998 - March 2005), NTT Communication Science Laboratories.
- 2003 summer: *Invited Professor*, Laboratoire d'Informatique de Paris 6, Universite Pierre et Marie Curie.
- 2002 summer: *Visiting Professor*, Institute for Advanced Computer Studies, University of Maryland.
- 2000 spring: *Invited Professor*, Laboratoire d'Informatique de Paris 6, Universite Pierre et Marie Curie.
- 1993-1998: *Full Professor* (July 1993), Department of Information Science, Kyoto University.
- 1996 summer: *Guest Professor*, Institut fuer Informatik, Technische Universitaet Muenchen.
- 1991-1993: *Senior Research Scientist*, Supervisor, NTT Communication Science Laboratories
- 1989-1991: *Senior Research Engineer*, Supervisor, NTT Communications and Information Processing Laboratories.
- 1985-1988: *Senior Research Engineer*, NTT Communications and Information Processing Laboratories.

- 1983-1984: *Visiting Scholar*, Department of Computer Science, Columbia University, New York.
1978-1982: *Research Engineer*, NTT Yokosuka Electric Communication Laboratories.

EDUCATION

- 1989.7: Doctor of Engineering in Information Science, Kyoto University, Kyoto.
Dissertation: *Performance Improvement of Production Systems*
1978.3: Master of Engineering in Information Science, Kyoto University, Kyoto.
1976.3: Bachelor of Engineering in Information Science, Kyoto University, Kyoto.

AREAS OF INTEREST

1. Digital Cities and Intercultural Collaboration
2. Groupware and Communityware
3. Autonomous Agents and Multiagent Systems
4. Problem Solving, Planning and Heuristic Search
5. Parallel and Distributed Computing.

PROFESSIONAL ACTIVITIES

Association

1. *Member* of the Scientific Council of Web Science Research Initiative, 2008, 2009, 2010.
2. *Member* of the AAAI Presidential Panel on Long-Term AI Futures, 2008, 2009.
3. *Board Member* of the International Foundation on Autonomous Agents and Multiagent Systems, IFAAMAS, 2007, 2008.
4. *Board Member* of the International Foundation on Multiagent Systems, IFMAS, 1998-2002, 2004-2006.

Journals and Books

1. *Advisory Board* of the Journal of Ambient Intelligence and Smart Environments (JAISE), Springer-Verlag, 2008-2009.
2. *Editorial Board Member* of Language@Internet!, 2008-2009.
3. *Area Editor* (Artificial Intelligence) of the Journal of Computer Science and Technology, 2007-2009.
4. *Series Editor* of Springer Book Series of Agent Technology, Springer-Verlag, 1997-2009.
5. *Editorial Board Member* of International Journal of Web Intelligence and Agent Systems,

2002-2009.

6. *Associate Editor* of the Journal of Autonomous Agents and Multi-Agent Systems, Kluwer Academic Publishers, 1997-2009.
7. *Editorial Board Member* of International Journal of Artificial Intelligence Tools, World Scientific, 1996-2009.
8. *Editorial Board Member* of Web Semantics: Journal of Science, Services and Agents on World Wide Web, Elsevier, 2006-2009.
9. *Editorial Board Member* of Handbook of Research on Knowledge-Intensive Organization. Information Science Reference, 2008.
10. *Editor-in-Chief* of Web Semantics: Journal of Science, Services and Agents on World Wide Web, Elsevier, 2003-2005.
11. *Editorial Board* of the Journal of Computational & Mathematical Organization Theory, Kluwer Academic Publishers, 1995-2003.
12. *Editorial Board Member* of the Information Society, An International Journal, 1998-2001.
13. *Associate Editor* of IEEE Transactions on Pattern Analysis and Machine Intelligence, 1996-1999.
14. *Editorial Board* of the Journal of Artificial Intelligence Research JAIR, Morgan Kaufmann, 1995, 1996.

Conferences

1. *Senior Program Committee Member* of International Conference on Autonomous Agents and Multiagent Systems, AAMAS, 2005, 2007, 2010.
2. *Program Co-Chair* of International Conference on Semantics, Knowledge and Grid, SKG, 2006.
3. *General Co-Chair* of International Conference on Intelligent Information Processing, IIP, 2006.
4. *International Advisory Committee Member* of International Conference on Knowledge, Information, and Creativity Support Systems, KICSS, 2006.
5. *Doctoral Mentoring Co-Chair* of International Conference on Autonomous Agents and Multiagent Systems, AAMAS, 2006.
6. *Track Co-Chair* of Fourth International Conference on Computing Sciences: Research, Innovation and Vision for the Future, RIVF, 2006.
7. *Advisory Board Member*, International Conference on Semantics, Knowledge and Grid, SKG, 2005.
8. *Senior Program Committee Member* of Third International Semantic Web Conference, ISWC, 2004.
9. *General Co-Chair* of First International Conference on Autonomous Agents and Multiagent Systems, AAMAS, 2002.
10. *Senior Program Committee Member* of Fourth International Conference on Autonomous Agents,

Agents, 2001.

11. *Program Vice-Chair* of First International Symposium on Applications and the Internet, SAINT, 2001.
12. *Program Committee Member* of Second Asia-Pacific Conference on Intelligent Agent Technology, IAT, 2001.
13. *Program Vice-Chair* of 20th International Conference on Distributed Computing Systems, ICDCS, 2000.
14. *Advisory Committee Member* of International Conference on Multiagent Systems, ICMAS, 1995, 1996.
15. *Program Vice-Chair* of 18th International Conference on Distributed Computing Systems, ICDCS, 1998.
16. *Member* of COP3 Information Support Committee of Kyoto, 1997
17. *Technical Program Committee Member* of IEEE Infocom, Infocom-97, 1997.
18. *Program Co-Chair* of the International Conference on Multiagent Systems, ICMAS, 1996.
19. *Advisory Committee Member* of International Conference on Multiagent Systems ICMAS, 1995, 1996.
20. *Program Committee Member / Video Track Chair* of 13th International Joint Conference on Artificial Intelligence, IJCAI, 1993.

Symposiums and Workshops

1. *Advisory Committee Member* of International Symposium on Collaborative Technologies and Systems, CTS, 2006-2009.
2. *Steering Committee Member* of International Conference on Principle of Practices in Multi-Agent Systems, PRIMA, 2009.
3. *Steering Committee Member* of International Conference on Multi-Agents, PRIMA, 2007-2008.
4. *General Chair* of Pacific Rim International Workshop on Multi-Agents, PRIMA, 2006.
5. *Program Co-Chair* of China-Japan Symposium on Exploratory Software, Beijing 2004, Shanghai 2005.
6. *Program Co-Chair* of International Workshop on Massively Multiagent Systems, 2004.
7. *Symposium Chair* of JST Symposium on Digital City Design, 2004.
8. *Workshop Co-Chair* of IEEE International Workshop on Knowledge Media Networking, 2002.
9. *Chair* of International Workshop / Symposium on Digital Cities, 1999, 2001.
10. *Program Co-Chair* of Sixth International Computer Science Conference: Active Media Technology, 2001.
11. *Program Co-Chair* of International Workshop on Cooperative Information Agents, CIA-01, 2001.
12. *Organizing Committee Member* of Trading Agent Competition, 2000.

13. *Co-Organizer* of French Japan Workshop on Distributed Objects and Agents on the Internet, 2000.
14. *Planning Committee Chair* of Pacific Rim International Workshop on Multi-Agents, PRIMA, 1999, 2000.
15. *Co-Organizer* of IEEE Workshop on Social Aspects of Knowledge and Memory, 1999.
16. *Program Chair* of First Pacific Rim International Workshop on Multi-Agents, PRIMA-98, 1998.
17. *Chair* of the Kyoto Meeting on Social Interaction and Communityware, 1998.
18. *Co-Organizer* of Fifteenth International Joint Conference on Artificial Intelligence, IJCAI-97 Workshop on Social Interaction and Communityware, 1997.
19. *Co-Organizer* of National Conference of Artificial Intelligence, AAAI-97 Workshop on On-Line Search, 1997.
20. *Co-Organizer* of International Conference on Multiagent Systems, ICMAS-96 Workshop on Learning, Interaction and Organizations in Multiagent Environments, 1996.
21. *Co-Organizer* of European Conference on Artificial Intelligence, ECAI-96 Workshop on Learning in Distributed Artificial Intelligence Systems, 1996.
22. *Advisory Committee Member* of AAAI International Workshop on Distributed Artificial Intelligence, DAIWS, 1990, 1992, 1993, 1994.
23. *Co-Organizer* of International Joint Conference on Artificial Intelligence, IJCAI-91 Workshop on Advances in Interfacing Production Systems with the Real World, 1991.

INVITED TALKS

Conferences

1. The Language Grid: Service-Oriented Collective Intelligence for Intercultural Collaboration. *IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT-08)*, Sydney, Australia, invited talk, December 9-12, 2008.
2. Language Grid Technologies for Intercultural Collaboration, *5th International Conference on Research, Innovation and Vision for the Future (RIVF-07)*, keynote talk, 2007.
3. Use of the Language Grid for Collaborative Work, *International Conference on Semantics, Knowledge and Grid (SKG-06)*, theme talk, November 2, 2006.
4. Multiagent Simulation Meet the Real-World, *Joint Conference on Harmonious Human Machine Environment (HHME-06)*, invited talk, October 31, 2006.
5. Language Grid: An Infrastructure for Intercultural Collaboration. *IEEE/IPSJ Symposium on Applications and the Internet (SAINT-06)*, keynote speech, Jan 25, 2006.
6. Intercultural Collaboration Using Machine Translation. *10th Machine Translation Summit (MT Summit X)*, invited talk, September 15, 2005, Phuket, Thailand.
7. Information, Interface and Interaction in Digital Cities. *International Conference on Digital*

- Archive Technologies (ICDAT-05)*, invited talk, June 16-17, 2005, Taipei, Taiwan.
8. Giga Navigation: Navigation for Millions. *IFIP International Conference on Intelligent Information Processing (ICIIP-04)*, invited talk, October 21-23, 2004, Beijing, China.
 9. Towards Communityware. *International Conference and Exhibition on the Practical Application of Intelligent Agents and Multi-Agent Technology (PAAM-97)*, invited talk, April 21-23, 1997, London, UK.
 10. Parallel, Distributed and Multi-Agent Production Systems: A Research Foundation for Distributed Artificial Intelligence. *International Conference on Multi-Agent Systems (ICMAS-95)*, invited talk, June 11-14, 1995, Hilton Hotel, San Francisco, USA.

Symposiums and Workshops

1. Participatory Technologies for Designing Ambient Intelligence Systems. *Ambient Intelligence Forum 2009*, keynote lecture, September 16-18, Hradec Králové Czech Republic, 2009.
2. Service-Oriented Collective Intelligence for Intercultural Collaboration. *The First Symposium on Intelligent Technologies and Information Management for Knowledge Society*, August 31, Tsinghua University, China, 2009.
3. Language Service Computing for Multicultural Society. *TTC (The Telecommunication Technology Committee) Meeting on ICT Promotion and Development for Rural Area*, August 22, 2008.
4. Language Infrastructure for Multicultural Community. *Minds and Societies*, Université du Québec à Montréal, July 3, 2008.
5. Redefining Community Computing. *International Workshop on Community Computing (CommCom2007)*, *International Symposium on Ubiquitous Computing Systems*, invited talk, November 25, Japan, 2007.
6. Agent and Grid Technologies for Intercultural Collaboration. *Pacific Rim International Workshop on Multi-Agents (PRIMA-06)*, invited talk, August 7, China, 2006.
7. Language Grid: An Infrastructure for Intercultural Collaboration. 15th German-Japanese Forum on IT On-line Registration Form, November 1, 2005
8. Using Machine Translation for Asia-wide Collaboration. *First International Symposium on Information and Language Processing*, Kyoto, February 22, 2005.
9. Scenario Description for Multiagent Systems. *China Agent Systems School*, China, December 14, 2004.
10. Society-Centered Design for Socially Embedded Multiagent Systems. *International Workshop on Cooperative Information Agents (CIA-04)*, invited talk, September 27, Germany, 2004.
11. Multiagent Simulation for Crisis Management. *International Pacific-Rim Workshop on Multi-Agents (PRIMA-04)*, invited talk, August 9, New Zealand, 2004.
12. Crisis Management Simulation in Digital Cities. *The Third International Workshop on Agent-based*

- Approaches in Economic and Social Complex Systems (AESCS-04)*, invited talk, March 27, Kyoto, 2004.
13. Towards Participatory Simulation in Digital City. *Asia Broadband Symposium on Digital City Collaboration*, invited talk, March 19, Peking University, 2004.
 14. Grounding Digital Cities in the Real World. *International Symposium on Ubiquitous Computing Systems (UCS 2003)*, keynote presentation, November 17, Kyoto, 2003.
 15. From Virtual to Real: A New Trend in Digital City Technology. *Science and Technology Forum of 5th Shanghai International Industry Fair*, keynote lecture, November 7, Shanghai, 2003.
 16. Digital Cities: Bridging Technologies and Humans. *Digital City Construction and Consume Digital Product Expo*, invited talk, April 27-29, Nanjing, 2002.
 17. Digital Cities: Bridging Technologies and Humans. *Sixth International Computer Science Conference: Active Media Technology*, invited talk, December 18-20, Hong Kong, 2001.
 18. Social Agents and Digital Cities. *Second International Workshop of Central and Eastern Europe on Multiagent Systems, (CEEMAS-01)*, invited talk, September 28, Cracow, Poland, 2001.
 19. Social Agents and Digital Cities. *France-Japan Workshop on Distributed Objects and Agents (DOA'2000)*, December 4, 2000.
 20. Social Agents and Digital Cities. *International Pacific-Rim Workshop on Multi-Agents (PRIMA-00)*, invited talk, August 28, Australia, 2000.
 21. Market-Based Multi-Agent Systems. *Workshop on Agent Technology (ATWORK)*, invited talk, May 30, Taiwan, 2000.
 22. Digital City Kyoto. *Workshop on Agent Technology (ATWORK)*, tutorial, May 29, Taiwan, 2000.
 23. Digital City Kyoto: Towards A Social Information Infrastructure. *International Workshop on Cooperative Information Agents (CIA-99)*, invited talk, August 2, Sweden, 1999.
 24. Casual Meetings in a Network. *International Symposium on Cooperative Database Systems for Advanced Applications*, invited talk, December 5-7, Kyoto, Japan, 1996.

PUBLICATIONS

Books

1. Toru Ishida Ed. *Community Computing: Collaboration over Global Information Networks*. John Wiley and Sons, 1998. ISBN 0471979651.
2. Toru Ishida. *Real-Time Search for Learning Autonomous Agents*. Kluwer Academic Publishers, 1997. ISBN 0792399447.
3. Toru Ishida. *Parallel, Distributed and Multiagent Production Systems*. Lecture Notes in Artificial Intelligence 878, Springer-Verlag, 1994. ISBN 0387586989.

Chapters in Books

1. Mika Yasuoka, Toru Ishida and Alessandro Aurigi. The Advancement of World Digital Cities. *Handbook on Ambient Intelligence and Smart Environments*, Springer-Verlag, 2009.
2. Hideyuki Nakanishi, Toru Ishida and Satoshi Koizumi. Virtual Cities for Simulating Smart Urban Public Spaces. *Urban Informatics: Community Integration and Implementation*. F. Marcus Ed. *Handbook of Research on Urban Informatics: The Practice and Promise of the Real-Time City*. Information Science Reference, IGI Global, pp.256-268, 2008.
3. Hideyuki Nakanishi and Toru Ishida. Understanding Social Agents in Virtual Space. K. Okada, T. Hoshi and T. Inoue Eds., *Communication and Collaboration Support Systems*, IOS press, pp. 116-131, 2005.
4. Toru Ishida. Activities and Technologies in Digital City Kyoto. Peter van den Besselaar and Satoshi Koizumi Eds. *Digital Cities III, Information Technologies for Social Capital: a Cross-Cultural Perspective*, Lecture Notes in Computer Science, State-of-the-Art Survey, 3081, pp. 166-187, 2005.
5. Toru Ishida, Alessandro Aurigi and Mika Yasuoka. World Digital Cities: Beyond heterogeneity. Peter van den Besselaar and Satoshi Koizumi Eds. *Digital Cities III, Information Technologies for Social Capital: a Cross-Cultural Perspective*, Lecture Notes in Computer Science, State-of-the-Art Survey, 3081, pp. 188-203, 2005.
6. Matthias Klusch, T. Rist, E. Andre, Toru Ishida and Hideyuki Nakanishi. Interactive Information Agents and Interfaces. RW Proctor, K-P L Vu Eds, *Handbook of Human Factors in Web Design*, Lawrence Erlbaum Associates, pp. 211-236, 2005.
7. Hideyuki Nakanishi, Toru Ishida, Katherine Isbister and Clifford Nass. Designing a Social Agent for Virtual Meeting Space. S. Payr and R. Trappl Eds., *Agent Culture: Human-Agent Interaction in a Multicultural World*, Lawrence Erlbaum Associates, pp. 245-266, 2004.
8. Saeko Nomura and Toru Ishida. Computerized Tools for Promoting Community Online. *Encyclopedia of Community*. Sage Reference, 2003.
9. Toru Ishida and Hideyuki Nakanishi. Designing Scenarios for Social Agents. Ning Zhong, Jiming Liu and Yiyu Yao Eds. *Web Intelligence*, pp. 59-76, Springer-Verlag, 2003.
10. Hideyuki Nakanishi, Chikara Yoshida, Toshikazu Nishimura, and Toru Ishida. FreeWalk: Shared Virtual Space for Casual Meetings. Borko Furht Ed. *Handbook of Internet Computing*. CRC Press, pp. 227-247, 2000.
11. Makoto Yokoo and Toru Ishida. Search Algorithms for Agents. Gerhard Weiss Ed. *Multiagent Systems: A Modern Approach to Distributed Artificial Intelligence*. MIT Press, pp. 165-199, 1999.
12. Toru Ishida, Toyoaki Nishida and Fumio Hattori. Overview of Community Computing. Toru Ishida Ed. *Community Computing: Collaboration over Global Information Networks*. John Wiley and

Sons, pp. 1-11, 1998.

13. Kazuhiro Kuwabara, Hirofumi Yamaki, Hiroshi Ishiguro and Toru Ishida. Agent Networks for Connecting People Together. Toru Ishida Ed. *Community Computing: Collaboration over Global Information Networks*. John Wiley and Sons, pp. 13-53, 1998.
14. Hideyuki Nakanishi, Chikara Yoshida, Toshikazu Nishimura and Toru Ishida. FreeWalk: A Three-Dimensional Meeting-Place for Communities. Toru Ishida Ed. *Community Computing: Collaboration over Global Information Networks*. John Wiley and Sons, pp. 55-89, 1998.
15. Hirofumi Yamaki, Michael P. Wellman and Toru Ishida. Market-Based QoS Control for Incorporating Community Preferences. Toru Ishida Ed. *Community Computing: Collaboration over Global Information Networks*. John Wiley and Sons, pp. 91-125, 1998.
16. Yoshiyasu Nishibe, Ichiro Morihara, Fumio Hattori, Toshikazu Nishimura, Hirofumi Yamaki, Toru Ishida, Harumi Maeda and Toyoaki Nishida. Mobile Digital Assistants for International Conferences. Toru Ishida Ed. *Community Computing: Collaboration over Global Information Networks*. John Wiley and Sons, pp. 245-284, 1998.
17. Kazuhiro Kuwabara, Toru Ishida, Yoshiyasu Nishibe and Tatsuya Suda. An Equilibratory Market-Based Approach for Distributed Resource Allocation and its Applications to Communication Network Control. Scott H. Clearwater Ed. *Market-Based Control: A Paradigm for Distributed Resource Allocation*. World Scientific Publishing, 1996.

Proceedings

1. Toru Ishida, Susan R. Fussell and Piek TJM Vossen Eds. *Intercultural Collaboration*, Lecture Notes in Computer Science, 4568, Springer-Verlag, 2007.
2. Toru Ishida, Les Gasser and Hideyuki Nakashima Eds. *Massively Multi-Agent Systems I*. Lecture Notes in Artificial Intelligence, 3446, Springer-Verlag, 2005.
3. Maria Gini, Toru Ishida, Cristiano Castelfranchi, and W. Lewis Johnson Eds., *Proceedings of the First International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS-02)*, ACM Press, 2002.
4. Makoto Tanabe, Peter van den Besselaar and Toru Ishida Eds. *Digital Cities II: Computational and Sociological Approaches*. Lecture Notes in Computer Science, State-of-the-Art Survey, 2362, Springer-Verlag, 2002. ISBN 3540439633.
5. Jiming Liu, Pong C. Yuen, Chun-hung Li, Joseph Ng and Toru Ishida Eds. *Active Media Technology: Proceedings of the 6th International Computer Science Conference, Amt 2001, Hong Kong, China, December 18-20*. Lecture Notes in Computer Science, 2252, Springer-Verlag, 2001. ISBN: 3540430350.
6. Toru Ishida and Katherine Isbister Eds. *Digital Cities: Experiences, Technologies and Future Perspectives*. Lecture Notes in Computer Science, State-of-the-Art Survey, 1765, Springer-Verlag,

2000. ISBN 3540672656.

7. Toru Ishida Ed. *Multiagent Platforms: Proceedings of the First Pacific-Rim International Workshop on Multi-Agents, Prima-98 Singapore, November 23, 1998: Selected Papers*. Lecture Notes in Artificial Intelligence 1599, Springer-Verlag, 1999. ISBN 3540659676.
8. Toru Ishida Ed. *Community Computing and Support Systems*. Lecture Notes in Computer Science, State-of-the-Art Survey, 1519, Springer-Verlag, 1998. ISBN 3540654755.
9. Sven Koenig, Avrim Blum, Richard Korf, and Toru Ishida Eds. *Proceedings of the AAAI-97 Workshop on On-Line Search*. The AAAI Press, WS-97-10, 1997.

Journals

1. Tomoko Koda, Toru Ishida, Matthias Rehm and Elisabeth André. Avatar Culture: Cross-Cultural Evaluations of Avatar Facial Expressions. *AI & Society*, Vol.24, No.3, pp. 237-250, 2009.
2. Yichuan Jiang, Jiuchuan Jiang and Toru Ishida. Compatibility between the Local and Social Performances of Multi-Agent Societies. *Expert Systems with Applications: An International Journal*, Vol.36, No.3, pp. 4443-4450, 2009.
3. Makoto Nakatsuji, Makoto Yoshida and Toru Ishida. Detecting Innovative Topics based on User-Interest Ontology. *Journal of Web Semantics*, Vol.7, No.2, pp. 107-120, 2009.
4. Yue Suo, Naoki Miyata, Hiroki Morikawa, Toru Ishida and Yuanchun Shi. Open Smart Classroom: Extensible and Scalable Learning System in Smart Space using Web Service Technology. *IEEE Transactions on Knowledge and Data Engineering*, Vol.21, No.6, pp. 814-828, 2009.
5. Toru Ishida and Hiromitsu Hattori. Participatory Technologies for Designing Ambient Intelligence Systems. *Journal of Ambient Intelligence and Smart Environments*, IOS Press, Vol. 1, pp. 39-45, 2009.
6. Heeryon Cho, Toru Ishida, Satoshi Oyama, Rieko Inaba, and Toshiyuki Takasaki. Assisting Pictogram Selection with Categorized Semantics. Special Section on Knowledge, Information and Creativity Support System, *IEICE Transactions on Information and Systems*, Vol. E91-D, No. 11, pp. 2638-2646, 2008.
7. Yi-Chuan Jiang and Toru Ishida. Local Interaction and Non-Local Coordination in Agent Social Law Diffusion. *Expert Systems with Applications*, Vol.34, No.1, pp. 87-95, 2008.
8. Donghui Lin, Toru Ishida and Huanye Sheng. Interorganizational Workflow Execution Based on Process Agents and ECA Rules. *IEICE Transactions on Information and Systems*, Vol.E90-D, No.9, pp. 1335-1342, 2007.
9. Satoshi Oyama, Takashi Kokubo and Toru Ishida. Domain Specific Search with Keyword Spices. *IEEE Transactions on Knowledge and Data Engineering*, Vol. 16, No. 1, pp.17-27, 2004.
10. Masashi Shimbo and Toru Ishida. Controlling the Learning Process of Real-time Heuristic Search. *Artificial Intelligence*. Vol. 146, Issue 1, pp. 1-41, 2003.

11. Toru Ishida. *Q: A Scenario Description Language for Interactive Agents*. *IEEE Computer*, Vol. 35, No. 11, pp. 54-59, 2002.
12. Toru Ishida. Digital City Kyoto: Social Information Infrastructure for Everyday Life. *Communications of the ACM (CACM)*, Vol. 45, No. 7, pp. 76-81, 2002.
13. Masayuki Okamoto, Katherine Isbister, Hideyuki Nakanishi and Toru Ishida. Supporting Cross-Cultural Communication with a Large-Screen System. *New Generation Computing*, Springer-Verlag, Vol. 20, No. 2, pp. 165-185, 2002.
14. Takushi Sogo, Hiroshi Ishiguro and Toru Ishida. Mobile Robot Navigation by a Distributed Vision System. *New Generation Computing*, Springer-Verlag, Vol. 19, No. 2, pp. 121-137, 2001.
15. Takushi Sogo, Hiroshi Ishiguro and Toru Ishida. Acquisition and Propagation of Spatial Constraints Based on Qualitative Information. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 23, No. 3, pp. 268-278, 2001.
16. Satoshi Oyama, Kaoru Hiramatsu and Toru Ishida. Cooperative Information Agents for Digital Cities. *International Journal of Cooperative Information Systems*, Vol. 10, No. 1&2, pp.197-215, 2001.
17. Hideyuki Nakanishi, Chikara Yoshida, Toshikazu Nishimura and Toru Ishida. FreeWalk: A 3D Virtual Space for Casual Meetings. *IEEE Multimedia*, Vol. 6, No. 2, pp. 20-28, 1999.
18. Toshikazu Nishimura, Hirofumi Yamaki, Takaaki Komura and Toru Ishida. Community Viewer: Visualizing Community Formation on Personal Digital Assistants. *ACM SIGAPP Applied Computing Review*, Vol. 6, No. 1, pp. 13-18, 1998 (also appeared in *ACM SAC'98 (Symposium on Applied Computing) Mobile Computing Track*, pp. 433-438, 1998).
19. Makoto Yokoo, Edmund H. Durfee, Toru Ishida, and Kazuhiro Kuwabara. The Distributed Constraint Satisfaction Problem: Formalization and Algorithms. *IEEE Transactions on Knowledge and Data Engineering*. Vol. 10, No. 5, pp. 673-685, 1998.
20. Toru Ishida. Real-Time Search for Autonomous Agents and Multi-Agent Systems, *Journal of Autonomous Agents and Multi-Agent Systems*. Kluwer Academic Publishers, Vol. 1, pp. 139-167, 1998.
21. Yoshiyasu Nishibe, Hiroaki Waki, Ichiro Morihara, Fumio Hattori, Toru Ishida, Toshikazu Nishimura, Hirofumi Yamaki, Takaaki Komura, Nobuyasu Itoh, Tadahiro Gotoh, Toyoaki Nishida, Hideaki Takeda, Atsushi Sawada, Harumi Maeda, Masao Kajihara, Hidekazu Adachi, Mobile Digital Assistants for Community Support. *AI Magazine*, Vol. 19, No. 2, pp. 31-49, 1998.
22. Toru Ishida. Towards Communityware. *New Generation Computing*, Vol. 16, No. 1, pp. 5-21, 1998.
23. Toru Ishida. Real-Time Bidirectional Search: Coordinated Problem Solving in Uncertain Situations. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 18, No. 6, pp. 617-628, 1996.
24. Toru Ishida and Richard E. Korf. Moving-Target Search: A Real-Time Search for Changing Goals.

- IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 17, No. 6, pp. 609-619, 1995.
25. Toru Ishida, Yutaka Sasaki, Keiko Nakata and Yoshimi Fukuhara. A Meta-Level Control Architecture for Production Systems. *IEEE Transactions on Knowledge and Data Engineering*, Vol. 7, No.1, pp. 44-52, 1995.
 26. Toru Ishida. An Optimization Algorithm for Production Systems. *IEEE Transactions on Knowledge and Data Engineering*, Vol.6, No. 4, pp.549 - 558, 1994.
 27. Toru Ishida, Les Gasser and Makoto Yokoo. Organization Self-Design of Distributed Production Systems. *IEEE Transactions on Knowledge and Data Engineering*, Vol. 4, No. 2, pp. 123-134, 1992.
 28. Toru Ishida. Parallel Firing of Production System Programs. *IEEE Transactions on Knowledge and Data Engineering*, Vol. 3, No.1, pp. 11-17, 1991.
 29. Sadahiro Isoda, Yoshizumi Kobayashi and Toru Ishida. Global Compaction of Horizontal Microprograms Based on the Generalized Data Dependency Graph. *IEEE Transactions on Computer*, Vol. C-32, 1983, pp. 922-933.

Conferences

1. Donghui Lin, Yoshiaki Murakami, Toru Ishida, Yohei Murakami and Masahiro Tanaka. Lessons Learned from Composing Web Services and Human Activities. *International Joint Conference on Service Oriented Computing (ICSOC-09)*, 2009.
2. Rie Tanaka, Yohei Murakami and Toru Ishida. Context-Based Approach for Pivot Translation Services. *International Joint Conference on Artificial Intelligence (IJCAI-09)*, pp.1555-1561, 2009.
3. Masahiro Tanaka, Toru Ishida, Yohei Murakami, and Satoshi Morimoto. Service Supervision: Coordinating Web Services in Open Environment. *IEEE International Conference on Web Services (ICWS-09)*, pp. 238-245, 2009.
4. Naomi Yamashita, Reiko Inaba, Hideaki Kuzuoka and Toru Ishida. Difficulties in Establishing Common Ground in Multiparty Groups using Machine Translation. *International Conference on Human Factors in Computing Systems (CHI-09)*, pp. 679-688, 2009.
5. Toru Ishida. Service-Oriented Collective Intelligence for Intercultural Collaboration. *IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT-08)*, pp. 4-8, 2008.
6. Arif Bramantoro, Masahiro Tanaka, Yohei Murakami, Ulrich Schäfer and Toru Ishida. A Hybrid Integrated Architecture for Language Service Composition. *IEEE International Conference on Web Services (ICWS-08)*, pp. 345-352, 2008.
7. Heeryon Cho, Toru Ishida, Toshiyuki Takasaki and Satoshi Oyama. Assisting Pictogram Selection

- with Semantic Interpretation. *European Semantic Web Conference (ESWC-08)*, LNCS 5021, pp. 65–79, 2008.
8. Toru Ishida, Akiyo Nadamoto, Yohei Murakami, Rieko Inaba, Tomohiro Shigenobu, Shigeo Matsubara, Hiromitsu Hattori, Yoko Kubota, Takao Nakaguchi, and Eri Tsunokawa. A Non-Profit Operation Model for the Language Grid. The First International Conference on Global Interoperability for Language Resources (*ICGL-08*), pp. 114-121, 2008.
 9. Suo Yue, Naoki Miyata, Toru Ishida, Yuanchun Shi. Open Smart Classroom: Extensible and Scalable Smart Space using Web Service Technology. *International Conference on Web-based Learning (ICWL-07)*, Lecture Notes in Computer Science 4823, Springer-Verlag, pp. 428-439, 2008.
 10. Toru Ishida and Shohei Yamane. Introduction to Scenario Description language *Q*. *International Conference on Informatics Research for Development of Knowledge Society Infrastructure (ICKS-07)*, pp. 137-144, 2007.
 11. Yichuan Jiang and Toru Ishida. A Model for Collective Strategy Diffusion in Agent Social Law Evolution. *International Joint Conference on Artificial Intelligence (IJCAI-07)*, pp. 1353-1358, 2007.
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