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Professional experience

Present	Assistant Professor Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University, USA
2006 – 2014	Researcher Intelligent Systems Laboratory, Sony Corporation, Japan
2011 – 2012	Visiting researcher Department of Health Care Policy, Harvard Medical School, USA
2009 – 2011	Visiting researcher Graduate School of System Design and Management, Keio University, Japan

Education

2019	Ph.D., Sociology Yale University, USA
2018	M.A., MPhil, Sociology Yale University, USA
2006	M.S., System and Mechanical Engineering Keio University, Japan
2004	B.S., Mechanical Engineering Keio University, Japan

Publications

Thesis

H. Shirado, Autonomous-agent interventions in human network cooperation and coordination.

Articles

H. Shirado, F.W. Crawford, and N.A. Christakis, "Collective communication and behaviour in response to uncertain 'Danger' in scenario experiments," ***Proceedings of the Royal Society A,*** Vol. 476, doi:10.1098/rspa/2019.0685, 2020

H. Shirado, G. Iosifidis, N.A. Christakis, "Assortative mixing and resource inequality enhance collective welfare in sharing networks," ***PNAS: Proceedings of the National Academy of Science***, Vol. 116, pp. 22442-22444, 2019.

H. Shirado, G. Iosifidis, L. Tassiulas, N.A. Christakis, "Resource sharing in technologically defined social networks," ***Nature Communications***, doi:10.1038/s41467-019-08935-2, 2019.

H. Shirado and N.A. Christakis, "Locally noisy autonomous agents improve global human coordination in network experiments," ***Nature***, Vol. 545, pp. 370-374, 2017.

A. Nishi, H. Shirado, and N.A. Christakis, "Intermediate levels of network fluidity amplify economic growth and mitigate economic inequality in experimental social networks," ***Sociological Science***, Vol. 2, pp. 544-557, 2015.

A. Nishi, H. Shirado, D. Rand, and N.A. Christakis, "Inequality and visibility of wealth in experimental social networks," ***Nature***, Vol. 526, pp. 426-429, 2015.

H. Shirado, F. Fu, J.H. Fowler, and N.A. Christakis, "Quality versus quantity of social ties in experimental cooperative networks," ***Nature Communications***, Vol. 4, No. 2814, doi:10.1038/ncomms3814, 2013.

Y. Nonomura, T. Miura, T. Miyashita, Y. Asao, H. Shirado, et. al., "How to identify water from thickener aqueous solutions by touch," ***Journal of the Royal Society Interface***, doi: 10.1098/rsif.2011.0577, 2011.

H. Shirado, M. Konyo, and T. Maeno, "Modeling of tactile texture recognition mechanism," ***Japan Society of Mechanical Engineers***, chapter C, Vol. 73, No. 733, pp. 2514-2522, 2007 (in Japanese).

H. Shirado, Y. Nonomura, and T. Maeno, "Development of artificial skin having human skin-like texture (Realization and evaluation of human skin-like texture by emulating surface pattern and elastic structure)," ***Japan Society of Mechanical Engineers***, chapter C, Vol. 73, No. 726, pp. 541-546, 2007 (in Japanese).

H. Shirado and T. Maeno, "Modeling of texture perception mechanism for tactile display and sensor," ***Virtual Reality Society of Japan***, Vol. 9, No. 3, pp. 235-240, 2004 (in Japanese).

Books

M. Nakatani, Y. Kakehi, and H. Shirado, ***Technology-Based Tactile Design***, Iwanami, 2011 (in Japanese).

Book chapters

H. Shirado and T. Maeno, ***Tactile recognition mechanism and technology of tactile sensor and display***, Science & Technology, chapter 1, Vol. 3, 2010 (in Japanese).

Conference proceedings

E. Erikson and H. Shirado, "Network structure and the division of labor," ***the Conference of the Society for the Advancement of Socio-Economics (SASE)***, 2019.

K. Nagasaka, A. Miyamoto, M. Nagano, H. Shirado, et. al., "Motion control of a virtual humanoid that can perform real physical interactions with a human, ***IEEE/RSJ International Conference on Intelligent Robots and Systems***, pp. 2303-2310, 2008.

H. Shirado, Y. Nonomura, and T. Maeno, Realization of human skin-like texture by emulating surface shape pattern and elastic structure," ***Symposium on Haptic Interface for Virtual Environnent and Teleoperator Systems***, pp. 295-296, 2006.

Y. Mukaibo, H. Shirado, M. Konyo and T. Maeno, "Development of texture sensor emulating the tissue structure and perceptual mechanism of human fingers," ***IEEE ICRA***, pp. 2576-2581, 2005.

H. Shirado and T. Maeno, "Modeling of human texture perception for tactile displays and sensors," ***World Haptics Conference***, pp. 57-58, 2005.

Manuscripts in preparation

H. Shirado and N.A. Christakis, "Network engineering using autonomous agents increases cooperation in human groups," *under review by iScience*

E. Erikson and H. Shirado, "Network structure and the division of labor*," under review by American Sociological Review*

Awards and Honors

2020	Marvin B. Sussman Best Dissertation Award, Yale Sociology
2016	Seed Grant Program, The National Institute of Social Science, USA
2007	Incentive Award, Chemical Society of Japan
2005	Best Poster Award, World Haptics
2005	Scholarship Award, Japan Scholarship Foundation

Invited talks

2019	"Experiments with social coordination in hybrid systems of humans and bots," Princeton University, USA
2019	"Experiments with coordination and cooperation in hybrid systems of humans and bots," *Dartmouth Interdisciplinary Network Research seminar*, Dartmouth College, USA
2019	"Experiments with coordination and cooperation in hybrid systems of humans and bots," *ALIFE 2019*, Newcastle University, UK
2019	"Coordination intervention in hybrid systems of humans and bots," *Workshop on Visualization and Control for Neural Dynamics*, National Institute for Physiological Science, Japan
2018	"Bots intervention in human coordination and cooperation," *Conference on Artificial Intelligence and Social Science*, The University of Electro-Communications, Japan
2018	"Hybrid systems of humans and bots optimize coordination in experimental Social Networks," *The 35th Annual Meeting of the Japanese Cognitive Science Society*, Ritusmeikan University, Japan
2018	"Disastrous network effects on human coordination in emergency response experiments," *Workshop on Collective Behavior, Social Media, and Systemic Risk*, Princeton University, USA
2018	"The intelligence of unintelligent agents: hybrid systems of humans and bots optimize coordination in experimental social networks," *Distributed, Collective Computation in Biological and Artificial Systems,* Howard Hughes Medical Institute, Janelia Research Campus, USA
2017	"The intelligence of unintelligent agents: bots-integrated human coordination in experimental social networks," *Association for the Advancement of Artificial Intelligence 2017 Spring Symposia,* Stanford University, USA
2016	"Experiments in social inequality and social coordination," *Contexts of Social Inequality*, WZB Berlin Social Science Center, Germany
2016	"Experiments in social inequality and social coordination," Graduate School of System Design and Management, Keio University, Japan

Teaching experience

"Social Web," Computer Science, Carnegie Mellon University, Spring 2020

"Network Interventions," Management 573E, (Teaching Assistant), Yale University, Spring 2018

"Methods in Quantitative Sociology," Sociology 162/580, Undergraduate and graduate class (Teaching Assistant), Yale University, Fall 2017

"Network Interventions," Management 573E, (Teaching Assistant), Yale University, Spring 2017

"Networks and Health," Management 874, Graduate class (Teaching Assistant), Yale University, Spring 2017

"Social Networks and Society," Sociology 167, Undergraduate class (Teaching Assistant), Yale University, Fall 2016

Service to profession

Ad-hoc reviews
American Sociological Review, *European Sociological Review, Nature Communications*, *Nature Human Behavior*, *Science Advances*, *Scientific Reports*, *SIGCHI*

Extra training

2017 Summer Institute in Computational Social Science, Princeton University, USA

Media coverage

"Behaving better online", *BBC*, 2018

"Bad bots do good: Random artificial intelligence helps people coordinate," *Science*, 2017

"Pushy AI bots nudge humans to change behavior," *Scientific American*, 2017

"Dumb robots that make mistakes actually help humans solve problems," *The Verge*, 2017

"How bots acting randomly can help speed human problem-solving," *Live Science*, 2017

"Working with robots helps people get along", *Science of Us*, 2017

"Making the scene: inequality," *PBS*, 2015

Languages

Fluent English
Native Japanese

References

Nicholas A. Christakis
Professor of Sociology, Medicine, and Ecology and Evolutionary Biology, Yale University
Co-director of Yale Institute for Network Science
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Forrest W. Crawford
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Takashi Maeno
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Yasuaki Kakehi
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