

Curriculum Vitae

Personal Details:

Name: Yasuo Kuniyoshi (Male, Born in 1962).

Titles: Bachelor of Engineering
Department of Applied Physics,
School of Engineering, The University of Tokyo

Master of Engineering
Department of Information Technology,
School of Engineering, The University of Tokyo

Doctor of Engineering
Department of Information Technology,
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Title of current Appointment and Department: Professor.
Department of Mechano-Informatics,
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Director
Next Generation Artificial Intelligence Research Center (AI Center)
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Languages: Japanese (mother tongue), English (fluent)

Education:

1985 Bachelor of Engineering, Department of Applied Physics, School of Engineering,
The University of Tokyo

1988 Master of Engineering, Department of Information Technology, School of Engineering,
The University of Tokyo

1991 Doctor of Engineering, Department of Information Technology, School of Engineering,
The University of Tokyo

Career History:

- 1991 Research Scientist at Intelligent Systems Division, Electrotechnical Laboratory, AIST
- 1995 Visiting Researcher (invited) at Academia Sinica, Taiwan (The Republic of China)
- 1995 Senior Research Scientist at Intelligent Systems Division, Electrotechnical Laboratory, AIST
- 1996 Visiting Scientist at Dept. of Computer Science, University of Wollongong and Dept. of Computer Science, Monash University, Australia
- 1996~1997 Visiting Scholar at MIT Artificial Intelligence Laboratory
- 2001 Associate Professor, The University of Tokyo
- 2005 Professor, The University of Tokyo
- 2008 Associate Member of Science Council of Japan
- 2005 Professor, The University of Tokyo
- 2008 Associate Member of Science Council of Japan
- 2012 Fellow, Robotics Society of Japan
- 2012 Director (Joint App.), BTCC (RIKEN BSI-Toyota Collaboration Center), RIKEN
- 2016 Director, Next Generation Artificial Intelligence Research Center (AI Center), The University of Tokyo

Awards:

- 1993 International Joint Conference on Artificial Intelligence (IJCAI) Outstanding Paper Award.
- 1996 Robotics Society of Japan, Outstanding Paper Award.
- 2007 Okawa Publications Prize.
- 2007 T.-J. Tarn Best Paper Award in Robotics.
- 2008 SAB Best Philosophy Paper Award.
- 2009 Gold Medal, Tokyo Techno Forum 21.
- 2014 Best Teaching Award of the Faculty of Engineering, The University of Tokyo (For “Robot Intelligence”).

And 11 other.

Publications:

78 Refereed journal papers, 217 Refereed conference papers, 45 Review articles, 18 Books (co-authored or edited), 35 Invited talks at international conferences/workshops, 14 Patents (incl. pending), 367 Unrefereed conference/workshop papers.

Important papers:

- [1] Y. Kuniyoshi and H. Inoue: Qualitative Recognition of Ongoing Human Action Sequences, Proceedings of International Joint Conference on Artificial Intelligence, pp.1600--1609, 1993. (Outstanding Paper Award).
- [2] Y. Kuniyoshi, S. Rougeaux, M. Ishii, N. Kita, S. Sakane, and M. Kakikura: Cooperation by Observation --- The Framework and Basic Task Patterns ---, Proceedings of IEEE International Conference on Robotics and Automation, pp. 767-774, 1994.
- [3] Y. Kuniyoshi, M. Inaba and H. Inoue: Learning by Watching: Extracting Reusable Task Knowledge from Visual Observation of Human Performance, IEEE Transactions on Robotics and Automation, vol.10, no. 6, pp.799-822, Dec., 1994.
- [4] Y. Kuniyoshi, N. Kita, K. Sugimoto, S. Nakamura, and T. Suehiro: A Foveated Wide Angle Lens for Active Vision, Proceedings of IEEE International Conference on Robotics and Automation, pp.2982-2988, 1995.
- [5] A. Zelinsky and Y. Kuniyoshi: Learning to Coordinate Behaviours for Robot Navigation, Advanced Robotics, vol.10, No. 2, pp.143-159, 1996.
- [6] Y. Kuniyoshi and L. Berthouze: Neural Learning of Embodied Interaction Dynamics, Neural Networks, Vol. 11,

- No.7-8, pp.1259-1276, Oct.,1998.
- [7] Y. Kuniyoshi, G. Cheng and A. Nagakubo, ETL-Humanoid: A Research Vehicle for Open-ended Action Imitation, Proc. of International Symposium on Robotics Research, pp. 42-49, 2001. (Also in: Raymond A. Jarvis and Alexander Zelinky (eds), *Robotics Research: The Tenth International Symposium*, Springer Tracts in Advanced Robotics, vol. 6, ISSN: 1610-7438, pp. 67-82, 2003.)
 - [8] Y. Kuniyoshi, Y. Yorozu, M. Inaba and H. Inoue, From Visuo-Motor Self Learning to Early Imitation -- A Neural Architecture for Humanoid Learning, Proc. IEEE Int. Conf. on Robotics and Automation, pp.3132-3139, 2003.
 - [9] Y. Kuniyoshi and S. Suzuki, Dynamic Emergence and Adaptation of Behavior Through Embodiment as Coupled Chaotic Field, Proc. IEEE Int. Conf. on Intelligent Robots and Systems, pp.2042-2049, 2004.
 - [10] Y. Kuniyoshi, Y. Ohmura, K. Terada, A. Nagakubo, S. Eitoku, T. Yamamoto: Embodied Basis of Invariant Features in Execution and Perception of Whole Body Dynamic Actions --- Knacks and Focuses of Roll-and-Rise Motion, *Robotics and Autonomous Systems*, vol.48, no.4, pp.189-201, Oct., 2004.
 - [11] Y. Kuniyoshi, R. Fukano, T. Otani, T. Kobayashi, N. Otsu: Haptic Detection of Object Affordances by a Multi-Fingered Robot Hand, *International Journal of Humanoid Robotics*, vol.2, no. 4, pp.415-436, Dec., 2005.
 - [12] A. Pitti, M. Lungarella, and Y. Kuniyoshi, "Quantification of Emergent Behaviors Induced by Feedback Resonance of Chaos", *Recent Advances in Artificial Life: Advances in Natural Computation*, 3(15):199-213, 2005.
 - [13] C. Nabeshima, Y. Kuniyoshi, and M. Lungarella, "Adaptive Body Schema for Robotic Tool Use", *Advanced Robotics*, vol. 20, no. 10, pp. 1105—1126, 2006.
 - [14] Y. Kuniyoshi and S. Sangawa, Early Motor Development from Partially Ordered Neural-Body Dynamics -- Experiments with A Cortico-Spinal-Musculo-Skeletal Model, *Biological Cybernetics*, vol. 95, no. 6, pp. 589-605, Dec., 2006.
 - [15] M. Lungarella, K. Ishiguro, Y. Kuniyoshi, and N. Otsu, Methods for quantifying the causal structure of bivariate time series, *Journal of Bifurcation and Chaos*, Vol. 17, No. 3, pp. 1-19, 2007.
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 - [17] Y. Kuniyoshi, Y. Yorozu, S. Suzuki, S. Sangawa, Y. Ohmura, K. Terada and A. Nagakubo: Emergence and Development of Embodied Cognition: A Constructivist Approach Using Robots, *Progress in Brain Research*, vol.164, p.425-445, ISSN 0079-6123, 2007.
 - [18] M. Lungarella, A. Pitti, and Y. Kuniyoshi: Information transfer at multiple scales, *Physical Review E*, Vol.76, 056117, 27th November 2007.
 - [19] K. Ishiguro, N. Otsu, M. Lungarella, and Y. Kuniyoshi: Detecting direction of causal interactions between dynamically coupled signals, *Physical Review E*, Vol.77, 026216, February, 2008.
 - [20] K. Ishiguro, N. Otsu, M. Lungarella, and Y. Kuniyoshi: Comparison of nonlinear Granger causality extensions for low-dimensional systems, *Physical Review E*, Vol.77, 036217, 25th March, 2008.
 - [21] A. Pitti, H. Alirezaei, Y. Kuniyoshi: Cross-modal and scale-free action representations through enaction, *Neural Networks*, Vol. 22, Issue 2, p.144-154, March, 2009
 - [22] A. Pitti, H. Mori, S. Kouzuma and Y. Kuniyoshi: Contingency Perception and Agency Measure in Visuo-Motor Spiking Neural Networks, *IEEE Transactions on Autonomous Mental Development*, Vol.1, No. 1, pp.86-97, May, 2009.
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 - [26] R. Niiyama, S. Nishikawa and Y. Kuniyoshi: A Biomechanical Approach for Openloop Bipedal Running with a Musculoskeletal Athlete Robot, *Advanced Robotics "Cutting Edge of Robotics in Japan 2012"*, Vol.26, No.1, 2012.
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- [29] S. Nishikawa, K. Tanaka, K. Shida, T. Fukushima, R. Niiyama and Y. Kuniyoshi: A Musculoskeletal Bipedal Robot Designed with Angle-Dependent Moment Arm for Dynamic Motion from Multiple States, *Advanced Robotics "Cutting Edge of Robotics in Japan 2014"*, Vol.28, No.7, 2014.
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