

# Yukie Nagai, Ph.D.

Project Professor  
International Research Center for Neurointelligence  
The University of Tokyo

7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan

Tel: +81-80-4084-0770

Email: [nagai.yukie@mail.u-tokyo.ac.jp](mailto:nagai.yukie@mail.u-tokyo.ac.jp)

Homepage: <https://developmental-robotics.jp/en/>



Dr. Yukie Nagai has been investigating underlying neural mechanisms for social cognitive development by means of computational approaches. She designs neural network models for robots to learn to acquire cognitive functions such as self-other cognition, estimation of others' intention and emotion, altruism, and so on based on the theory of predictive coding. The simulator reproducing atypical perception in autism spectrum disorder (ASD), which has been developed by her group, greatly impacts society as it enables people with and without ASD to better understand potential causes for social difficulties. She was elected to "30 women in robotics you need to know about" in 2019, "World's 50 Most Renowned Women in Robotics" in 2020, and "35 Women in Robotics Engineering and Science" in 2022. She serves as the principal investigator of JST CREST "Cognitive Mirroring" and CREST "Cognitive Feeling" since December 2016 and October 2021, respectively.

## Career Experience

- |                     |  |
|---------------------|--|
| Apr 2019 – present  | Project Professor, International Research Center for Neurointelligence, The University of Tokyo, Japan.                                |
| May 2017 – Mar 2019 | Senior Researcher, Center for Information and Neural Networks, National Institute of Information and Communications Technology, Japan. |
| Oct 2009 – Apr 2017 | Specially Appointed Associate Professor, Graduate School of Engineering, Osaka University, Japan.                                      |
| Feb 2008 – Sep 2009 | Postdoc Researcher, Graduate School of Research Institute for Cognition and Robotics, Bielefeld University, Germany.                   |
| Apr 2006 – Jan 2008 | Postdoc Researcher, Faculty of Technology, Bielefeld University, Germany.  |
| Apr 2004 – Mar 2006 | Postdoc Researcher, National Institute of Information and Communications Technology, Japan.  |
| Nov 2002 – Mar 2004 | Research Associate, Graduate School of Engineering, Osaka University, Japan.   |

## Concurrent Positions

- |                     |   |
|---------------------|---|
| Oct 2023 – Sep 2029 | Associate Member, Science Council of Japan, Japan.  |
| Apr 2023 – Mar 2024 | Visiting Professor, Center for Human Nature, Artificial Intelligence, and Neuroscience (CHAIN), Hokkaido University, Japan. |
| Apr 2021 – Sep 2021 | Part-time Lecturer, Center for Human Nature, Artificial Intelligence, and Neuroscience (CHAIN), Hokkaido University, Japan. |
| Oct 2020 – Mar 2023 | Project Professor, Institute for AI and Beyond, The University of Tokyo, Japan.   |
| Apr 2020 – Mar 2024 | Research Area Advisors, Japan Science and Technology Agency (PRESTO "The fundamental technologies for Trustworthy AI")      |
| Oct 2019 – Jul 2020 | Fellow, Center for Interdisciplinary Research, Bielefeld University, Germany.   |

Apr 2018 – Mar 2019	Guest Associate Professor, Graduate School of Engineering, Osaka University, Japan.
Jan 2017 – Dec 2018	Visiting Professor, Cluster of Excellence Cognitive Interaction Technology, Bielefeld University, Germany.
Oct 2009 – Dec 2016	Visiting Researcher, Cluster of Excellence Cognitive Interaction Technology, Bielefeld University, Germany.
Apr 2015 – Sep 2015	Part-time Lecturer, Kyoto Institute of Technology, Japan.
Dec 2003 – Mar 2004	Part-time Lecturer, Faculty of Technology, Tokyo University of Agriculture and Technology, Japan.

## Education

Mar 2004 Ph.D. in Engineering, Osaka University, Japan.

*Dissertation title: "Understanding the Development of Joint Attention from a Viewpoint of Cognitive Developmental Robotics"*

*Committee: Minoru Asada (Chair), Hiroshi Ishiguro, Yoshiaki Shirai*

Mar 1999 Master of Engineering, Aoyama Gakuin University, Japan.

Mar 1997 Bachelor of Engineering, Aoyama Gakuin University, Japan.

## Societies

IEEE.

The Robotics Society of Japan.

The Japanese Society of Artificial Intelligence.

Japanese Cognitive Science Society.

## Awards

- [1] 35 Women in Robotics Engineering and Science (October 2022)
- [2] IEEE RAS Distinguished Lecturer (October 2022)
- [3] SmartBot Challenge Finalist of the 2022 IEEE International Conference on Development and Learning (September 2022)
- [4] World's 50 Most Renowned Women in Robotics (June 2020)
- [5] JSAI Annual Conference Award of the 33rd Annual Conference of the Japanese Society for Artificial Intelligence (November 2019)
- [6] 30 women in robotics you need to know about (October 2019)
- [7] Best Student Paper Award of the 5th International Conference on Human-Agent Interaction (October 2017)
- [8] JSAI Annual Conference Award of the 30th Annual Conference of the Japanese Society for Artificial Intelligence (May 2017)
- [9] Babybot Challenge 1st Place Award of the 5th IEEE International Conference on Development and Learning and on Epigenetic Robotics (August 2015)
- [10] AI Award of the RoboCup Japan Open (May 2015)

- [11] Best Presentation Award of the 31st Annual Conference of the Japanese Cognitive Science Society (November 2014)
- [12] Presidential Award for Achievement of Osaka University (July 2014)
- [13] Best Paper Research Award of the RAAD Workshop: Robotics in Alpe-Adria-Danube Region (September 2013)
- [14] Presidential Award for Achievement of Osaka University (August 2013)
- [15] Japanese Society for Artificial Intelligence SIG Research Award (June 2013)
- [16] Research Award of the RoboCup Japan Open (May 2013)
- [17] Best Paper Award Finalist of the 16th Annual RoboCup International Symposium (June 2012)
- [18] Best Poster Presentation Award of the 12th Annual Meeting of the Japanese Society of Baby Science (June 2012)
- [19] AI Award of the RoboCup Japan Open (May 2012)
- [20] Best Paper Award Finalist of the 16th IEEE International Symposium on Robot and Human Interactive Communication (August 2008)
- [21] Best Presentation Award of the 22nd Annual Conference of the Japanese Cognitive Science Society (July 2005)

## Scientific Activities

### *Organizing Committee of Conferences*

- [1] Publicity Chair of the IEEE International Conference on Development and Learning (2024)
- [2] Expo Co-Chair of the IEEE International Conference on Robotics and Automation (2024)
- [3] Bridge Chair of the IEEE International Conference on Development and Learning (2023)
- [4] General Chair of the International Symposium on Predictive Brain and Cognitive Feelings (2023)
- [5] General Chair of the IEEE International Conference on Development and Learning (2022)
- [6] Publicity Chair of the IEEE International Conference on Development and Learning (2021)
- [7] General Chair of the 8th International Conference on Human-Agent Interaction (2020)
- [8] Publicity Chair of the 10th Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (2020)
- [9] General Chair of the 5th International Conference on Human-Agent Interaction (2017)
- [10] Publicity Chair of the 7th Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (2017)
- [11] Advisory Board of the 4th International Conference on Human-Agent Interaction (2016)
- [12] General Chair of the 11th ACM/IEEE International Conference on Human-Robot Interaction (2016)
- [13] Workshops and Tutorials Chair of the 2015 IEEE International Conference on Robotics and Automation (2015)
- [14] Special Program Chair of the 23rd IEEE International Symposium on Robot and Human Interactive Communication (2014)
- [15] Publication Chair of the 9th ACM/IEEE International Conference on Human-Robot Interaction (2014)
- [16] General Chair of the 3rd Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (2013)

- [17] Program Chair of the 2nd Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (2012)
- [18] Publicity Chair of the 1st Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (2011)
- [19] Registration Chair of the 5th ACM/IEEE International Conference on Human-Robot Interaction (2010)
- [20] Communication Chair of the 4th IEEE International Conference on Development and Learning (2005)
- [21] Vice Chair of Planning of the 40th Annual Conference of the Robotics Society of Japan (2022)
- [22] General Chair of the 10th Annual Meeting of Japan Society for Developmental Neuroscience (2021)
- [23] Executive Committee of the 44th Annual Meeting of the Japan Neuroscience Society (2021)
- [24] General Chair of the 6th Annual Meeting of Japan Society for Developmental Neuroscience (2017)

### *Program Committee of Conferences*

- [1] Program Committee of the IEEE International Conference on Development and Learning and on Epigenetic Robotics (2011-now)
- [2] Program Committee of the ACM/IEEE International Conference on Human-Robot Interaction (2011-now)
- [3] Program Committee of the IEEE International Symposium on Robot and Human Interactive Communication (2016-now)
- [4] Program Committee of the IEEE-RAS International Conference on Humanoid Robots (2012-2016)
- [5] Program Committee of the IEEE/RSJ International Conference on Intelligent Robots and Systems (2017)
- [6] Program Committee of the HRI Pioneers Workshop (2012-2016)
- [7] Program Committee of the RO-MAN2015-WS "Emotion for Social Robotics" (2015)
- [8] Program Committee of the Annual Meeting of the Cognitive Science Society (2015)
- [9] Program Committee of the 1st International Workshop on Emotion for Sociable Agents (2014)
- [10] Program Committee of the International Joint Workshop on Advanced Sensing / Visual Attention and Interaction (2013)
- [11] Program Committee of the IROS2012-WS "Human Behavior Understanding" (2012)
- [12] Program Committee of the WCCI2012 Special Session "Bio-Inspired Developmental Mechanisms" (2012)
- [13] Program Committee of the IEEE International Conference on Development and Learning (2006-2010)
- [14] Program Committee of the International Conference/Workshop on Epigenetic Robotics (2005-2010)
- [15] Program Committee of the HAI (Human-Agent Interaction) Symposium (2011-2012)
- [16] Program Committee of the International Workshop on Gaze Sensing and Interactions (2010)
- [17] Program Committee of the 3rd International Conference on Human System Interaction (2010)
- [18] Program Committee of the International Workshop on Robotics for Young Researchers (2009)
- [19] Program Committee of the 4th International Symposium on Imitation in Animals and Artifacts (2007)
- [20] Program Committee of the 2006 Robotics: Science and Systems Conference (2006)

*Miscellaneous*

- [1] Scientific and Industrial Advisory Board of Centre for Tactile Internet with Human-in-the-Loop (CeTI), Dresden University of Technology (2022-now)
- [2] Vice Chair of IEEE Cognitive and Developmental Systems Technical Committee (2021-2022)
- [3] Special Issues Editor for ACM Transactions on Human-Robot Interaction (2017-now)
- [4] Vice Chair of IEEE Autonomous Mental Development Technical Committee (2012-2013)
- [5] IEEE CIS Technical Committee on Cognitive and Developmental Systems / Autonomous Mental Development (2011-now)
- [6] IEEE RAS Technical Committee on Cognitive Robotics (2014-now)
- [7] Steering Committee of Human-Robot Interaction (2014-now)
- [8] Steering Committee of Human-Agent Interaction (2016-2018)
- [9] Review Editor of Frontiers in Neurorobotics (2011-now)
- [10] Review Editor of Frontiers in Robotics and AI: Humanoid Robotics (2014-now)
- [11] Scientific Organizing Committee and Local Organizing Committee of ISSA Summer School (2017)
- [12] Scientific and Usage Advisory Board for EARS (Embodied Audition for RobotS) project (2014-now)
- [13] Organizer of IROS2023 Workshop on World Models and Predictive Coding in Cognitive Robotics (2023)
- [14] Organizer of ALIFE2023 Workshop on Cognitive feelings: Towards multi-disciplinary approaches for realizing artificial systems with cognitive capacities (2023)
- [15] Organizer of IROS2022 Women in Engineering Forum (2022)
- [16] Organizer of ICDL2022 Workshop on “Neurodiversity of cognitive feelings” (2022)
- [17] Organizer of Online Lecture Series “Developing Minds” (2021-now)
- [18] Organizer of the ICDL2021 Workshop on “Spatio-temporal Aspects of Embodied Predictive Processing” (2021)
- [19] Organizer of the ICDL-EpiRob2018 Workshop on “Understanding Developmental Disorders: From Computational Models to Assistive Technology” (2018)
- [20] Organizer of the HAI2017 Workshop on “Representation learning for human and robot cognition” (2017)
- [21] Organizer of the IROS2016 Workshop on “Bio-inspired Social Robot Learning in Home Scenarios” (2016)
- [22] Organizer of the ICAR2015 Workshop on “Robot Learning: Bottom-up and top-down development of robot skills” (2015)
- [23] Organizer of the HRI2015 Workshop on “Cognition: A Bridge between Robotics and Interaction” (2015)
- [24] Organizer of the HRI2014 Workshop on “HRI: a bridge between Robotics and Neuroscience” (2014)
- [25] Organizer of the IJCNN2014 Special Session “Cognition and Development” (2014)
- [26] Organizer of the ICDL-EpiRob2013 Special Session “Constructive Developmental Science: Two Endeavors toward Understanding Human Development” (2013)
- [27] Organizer of the Humanoids2012 Workshop on “Can developmental robotics yield human-like cognitive abilities?” (2012)
- [28] Organizer of the Workshop on Robot Anthropology (2012)
- [29] Organizer of the IROS Workshop on “Cognitive Neuroscience Robotics” (2011-2013)

- [30] Organizer of the Bielefeld-Osaka Workshop on Cognition and Robotics (2011)
- [31] Organizer of the ICDL-EpiRob2011 Special Session “How can human scaffolding support robots learning?” (2011)
- [32] Organizer of the HRI2011 Workshop on “The role of expectations in intuitive human-robot interaction” (2011)
- [33] Organizer of the Bielefeld-Osaka Workshop (2010)
- [34] Representative of the Robotics Society of Japan (2021-2025)
- [35] Research Area Advisors of PRESTO “The fundamental technologies for Trustworthy AI” (2020-2022)
- [36] Trustee of Japan Society for Developmental Neuroscience (2017-now)
- [37] Committee of Mechanism of Brain and Mind (2017-now)
- [38] Organizer of the RSJ Developed Session “GCOE: Human-Friendly Robotics Based on Cognitive Neuroscience” (2010-2013)
- [39] Organizer of the RSJ Developed Session “Constructive Developmental Science: Revealing the Principles of Development from Fetal Period and Systematic Understanding of Developmental Disorders” (2013)
- [40] Organizer of the JSBS “New Direction of Constructive Developmental Science” (2013)

## Competitive Research Funds

### *Principal Investigator*

- [1] CREST “Cognitive Feelings that Mediate Between Perception and Emotion” (Grant Number: JPMJCR21P4), 2021.10–2027.3.  
Budget: JPY123,000,000 (Total: JPY274,000,000)
- [2] Grant-in-Aid for Scientific Research (S) “Understanding Cognitive Individuality Based on a Unified Brain Theory: Assisting People with Developmental Disorders” (Research project number: 21H05053), 2021.7–2026.3.  
Budget: JPY80,500,000 (Total: JPY145,500,000)
- [3] Grant-in-Aid for Scientific Research (A) “Developmental Mechanism of Individuality in Self-Recognition: Systematic Understanding Based on Predictive Coding” (Research project number: 21H04884), 2021.4–2025.3.  
Budget: JPY21,700,000 (Total: JPY32,300,000)
- [4] Institute for AI and Beyond “AI x Tojisha-Kenkyu: Computational Neuroscience for Systematic Understanding of Cognitive Individuality”, 2020.7–2023.3.  
Budget: JPY54,400,000 (Total: JPY59,500,000)
- [5] CREST “Cognitive Mirroring: Assisting people with developmental disorders by means of self-understanding and social sharing of cognitive processes” (Grant Number: JPMJCR16E2), 2016.12–2022.3.  
Budget: JPY139,600,000 (Total: JPY300,000,000)
- [6] Grant-in-Aid for Young Scientists (A) “Development of theory of mind from self-other cognition facilitated by maturational constraints: A constructive approach” (Research project number: 25700027), 2013.4–2016.3.  
Budget: JPY18,800,000
- [7] Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area) “Modeling social cognitive development and designing support systems for developmental disorders” (Research project number: 24119003), 2012.6–2017.3.  
Budget: JPY85,300,000 (Total: JPY191,700,000)

- [8] Grant-in-Aid for Challenging Exploratory Research “Emotion Recognition from Multimodal Information Based on Synesthesia” (Research project number: 24650083), 2012.4–2014.3.  
Budget: JPY3,000,000
- [9] Research Grant provided by Research Institute for Cognition and Robotics, Bielefeld University “Designing Human-Robot Interaction based on / toward Understanding Parent-Infant Interaction”, 2008–2011.  
Budget: EUR39,300

### *Co-Investigator*

- [1] Moonshot Research and Development Program “Development of “At-will Translator” connecting various minds based on brain and body functions” (Research project number: JPMJMS2292), 2022.9–2027.3.  
Budget: JPY89,000,000 (PI: Ken-ichiro Tsutsui)
- [2] Grant-in-Aid for Scientific Research (S) “Dynamics of caregiver-infant interaction: Foundation of the emergent mechanism of diversity in human development” (Research project number: 21H04981), 2021.7–2026.3.  
Budget: JPY31,000,000 (PI: Masako Myowa)
- [3] Grant-in-Aid for Scientific Research (A) “Dynamics of mother-infant interaction: Foundation of the emergent mechanism of diversity of human development” (Research project number: 21H04895), 2021.4–2025.3.  
Budget: JPY6,900,000 (PI: Masako Myowa)
- [4] Grant-in-Aid for Scientific Research (A) “Corrective and assistive frameworks for visual perception using head-mounted display” (Research project number: 18H04116), 2018.4–2022.3.  
Budget: JPY7,400,000 (PI: Kiyoshi Kiyokawa)
- [5] COI STREAM (Satellite) “Healthy development of children’s mind exploiting the characteristic of their brains: Paradigm shift from atypicality to speciality”, 2014.4–2022.3.  
Budget: JPY12,308,000 (PI: Yoshio Minabe)
- [6] Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area) “Constructive Developmental Science: Revealing the Principles of Development from Fetal Period and Systematic Understanding of Developmental Disorders” (Research project number: 24119001), 2012.6–2017.3.  
Budget: JPY3,460,000 (PI: Yasuo Kuniyoshi)
- [7] Grant-in-Aid for Specially Promoted Research “Constructive Developmental Science Based on Understanding the Process from Neuro-Dynamics to Social Interaction” (Research project number: 24000012), 2012.5–2017.3.  
Budget: JPY8,500,000 (PI: Minoru Asada)
- [8] Core-to-Core Program “Competitive Partnership on Cognitive Neuroscience Robotics”, 2012.4–2017.3.  
Budget: JPY5,000,000 (PI: Minoru Asada)
- [9] Grant-in-Aid for Scientific Research (A) “The brain mechanisms of working memory under the unconscious processes: comparison between conscious and anesthetized conscious condition” (Research project number: 23240036), 2011.4–2016.3.  
Budget: JPY1,200,000 (PI: Mariko Osaka)
- [10] Grant-in-Aid for Scientific Research (S) “Understanding and construction of developmental process from body-babbling to sociality acquisition” (Research project number: 22220002), 2010.4–2015.3.  
Budget: JPY16,450,000 (PI: Minoru Asada)

## Publications

Complete list: <https://developmental-robotics.jp/en/publications/>

Google Scholar: <https://scholar.google.co.jp/citations?user=HqTUx7YAAAAAJ&hl=en>  
(Citations: 2298, h-index: 25, i10-index: 54)

### Articles in Journals

- [1] Tatsuya Daikoku, Shinichiro Kumagaya, Satsuki Ayaya, and **Yukie Nagai**, "Non-autistic persons modulate their speech rhythm while talking to autistic individuals," *PLoS ONE*, 18(9):e0285591, September 2023.
- [2] Masaki Tsujita, Miho Homma, Shin-ichiro Kumagaya, and **Yukie Nagai**, "Comprehensive intervention for reducing stigma of autism spectrum disorders: Incorporating the experience of simulated autistic perception and social contact," *PLoS ONE*, 18(8):e0288586, August 2023.
- [3] Melisa Idil Sener, **Yukie Nagai**, Erhan Oztop, and Emre Ugur, "Exploration With Intrinsic Motivation Using Object-Action-Outcome Latent Space," *IEEE Transactions on Cognitive and Developmental Systems*, 15(2):325-336, June 2023.
- [4] Anja Philippsen and **Yukie Nagai**, "A predictive coding account for cognition in human children and chimpanzees: A case study of drawing," *IEEE Transactions on Cognitive and Developmental Systems*, 14(4):1306-1319, December 2022.
- [5] Anja Philippsen, Sho Tsuji, and **Yukie Nagai**, "Quantifying developmental and individual differences in spontaneous drawing completion among children," *Frontiers in Psychology*, 13:783446, November 2022.
- [6] Maria Tsfasman, Anja Philippsen, Carlo Mazzola, Serge Thill, Alessandra Sciutti, and **Yukie Nagai**, "The world seems different in a social context: A neural network analysis of human experimental data," *PLoS ONE*, 17(8):e0273643, August 2022.
- [7] Anja Philippsen, Sho Tsuji, and **Yukie Nagai**, "Simulating Developmental and Individual Differences of Drawing Behavior in Children Using a Predictive Coding Model," *Frontiers in Neurorobotics*, 16:856184, June 2022.
- [8] Jyh-Jong Hsieh, **Yukie Nagai**, Shin-ichiro Kumagaya, Satsuki Ayaya, and Minoru Asada, "Atypical Auditory Perception Caused by Environmental Stimuli in Autism Spectrum Disorder: A Systematic Approach to the Evaluation of Self-Reports," *Frontiers in Psychiatry*, 13:888627, June 2022.
- [9] Junko Matsuzaki, Kuriko Kagitani-Shimono, Sho Aoki, Ryuzo Hanaie, Yoko Kato, Mariko Nakanishi, Aika Tatsumi, Koji Tominaga, Tomoka Yamamoto, **Yukie Nagai**, Ikuko Mohri, and Masako Taniike, "Abnormal cortical responses elicited by audiovisual movies in patients with autism spectrum disorder with atypical sensory behavior: A magnetoencephalographic study," *Brain and Development*, 44(2):81-94, February 2022.
- [10] M. Yunus Seker, Alper Ahmetoglu, **Yukie Nagai**, Minoru Asada, Erhan Oztop, and Emre Ugur, "Imitation and mirror systems in robots through Deep Modality Blending Networks," *Neural Networks*, 146:22-35, February 2022.
- [11] Karl Friston, Rosalyn J. Moran, **Yukie Nagai**, Tadahiro Taniguchi, Hiroaki Gomi, and Josh Tenenbaum, "World model learning and inference," *Neural Networks*, 144:573-590, December 2021.
- [12] Takato Horii and **Yukie Nagai**, "Active Inference Through Energy Minimization in Multimodal Affective Human-Robot Interaction," *Frontiers in Robotics and AI*, 8:684401, November 2021.
- [13] Tatsuya Daikoku, Qi Fang, Tomohito Hamada, Youichi Handa, and **Yukie Nagai**, "Importance of environmental settings for the temporal dynamics of creativity," *Thinking Skills and Creativity*, 41:100911, September 2021.



- [14] Serkan Bugur, Erhan Oztop, **Yukie Nagai**, and Emre Ugur, "Effect regulated projection of robot 's action space for production and prediction of manipulation primitives through learning progress and predictability-based exploration," *IEEE Transactions on Cognitive and Developmental Systems*, 13(2):286-297, June 2021.
- [15] Tatsuya Daikoku, Geraint A. Wiggins, and **Yukie Nagai**, "Statistical Properties of Musical Creativity: Roles of Hierarchy and Uncertainty in Statistical Learning," *Frontiers in Neuroscience*, 15:640412, April 2021.
- [16] Anja Philippsen and **Yukie Nagai**, "Deficits in Prediction Ability Trigger Asymmetries in Behavior and Internal Representation," *Frontiers in Psychiatry*, 11:564415, November 2020.
- [17] Yuji Kawai, Yuji Oshima, Yuki Sasamoto, **Yukie Nagai**, and Minoru Asada, "A Computational Model for Child Inferences of Word Meanings via Syntactic Categories for Different Ages and Languages," *IEEE Transactions on Cognitive and Developmental Systems*, 12(3):401-416, September 2020.
- [18] Jason Orlosky, Konstantinos Theofilis, Kiyoshi Kiyokawa, and **Yukie Nagai**, "Effects of Throughput Delay on Perception of Robot Teleoperation and Head Control Precision in Remote Monitoring Tasks," *PRESENCE: Virtual and Augmented Reality*, 27(2):226-241, February 2020.
- [19] Pablo Lanillos, Daniel Oliva, Anja Philippsen, Yuichi Yamashita, **Yukie Nagai**, and Gordon Cheng, "A review on neural network models of schizophrenia and autism spectrum disorder," *Neural Networks*, 122:338-363, February 2020.
- [20] Fabio Vannucci, Alessandra Sciutti, Hagen Lehman, Giulio Sandini, **Yukie Nagai**, and Francesco Rea, "Cultural differences in speed adaptation in human-robot interaction tasks," *Paladyn, Journal of Behavioral Robotics*, 10(1):256-266, August 2019.
- [21] Mert Imre, Erhan Oztop, **Yukie Nagai**, and Emre Ugur, "Affordance-based altruistic robotic architecture for human-robot collaboration," *Adaptive Behavior*, 27(4):223-241, August 2019.
- [22] Beata J. Grzyb, **Yukie Nagai**, Minoru Asada, Allegra Cattani, Caroline Floccia, and Angelo Cangelosi, "Children's scale errors are a natural consequence of learning to associate objects with actions: A computational model," *Developmental Science*, 22(4):e12777, July 2019.
- [23] Sho Aoki, Kuriko Kagitani-Shimono, Junko Matsuzaki, Ryuzo Hanaie, Mariko Nakanishi, Koji Tomi-naga, **Yukie Nagai**, Ikuko Mohri, and Masako Taniike, "Lesser suppression of response to bright visual stimuli and visual abnormality in children with autism spectrum disorder: a magnetoencephalographic study," *Journal of Neurodevelopmental Disorders*, 11:9, June 2019.
- [24] **Yukie Nagai**, "Predictive learning: its key role in early cognitive development," *Philosophical Transactions of the Royal Society B: Biological Sciences*, 374(1771):20180030, March 2019.
- [25] Takato Horii, **Yukie Nagai**, and Minoru Asada, "Modeling Development of Multimodal Emotion Perception Guided by Tactile Dominance and Perceptual Improvement," *IEEE Transactions on Cognitive and Developmental Systems*, 10(3):762-775, September 2018.
- [26] Jun-Cheol Park, Dae-Shik Kim, and **Yukie Nagai**, "Learning for Goal-Directed Actions Using RNNPB: Developmental Change of "What to Imitate"," *IEEE Transactions on Cognitive and Developmental Systems*, 10(3):545-556, September 2018.
- [27] Francisco Cruz, Sven Magg, **Yukie Nagai**, and Stefan Wermter, "Improving interactive reinforcement learning: What makes a good teacher?," *Connection Science*, 30(3):306-325, September 2018.
- [28] Yuji Kawai, **Yukie Nagai**, and Minoru Asada, "Prediction Error in the PMd As a Criterion for Biological Motion Discrimination: A Computational Account," *IEEE Transactions on Cognitive and Developmental Systems*, 10(2):237-249, June 2018.
- [29] Jimmy Baraglia, Maya Cakmak, **Yukie Nagai**, Rajesh P. N. Rao, and Minoru Asada, "Efficient human-robot collaboration: When should a robot take initiative?," *The International Journal of Robotics Research*, 36(5-7):563-579, June 2017.
- [30] Takato Horii, **Yukie Nagai**, and Minoru Asada, "Imitation of human expressions based on emotion estimation by mental simulation," *Paladyn. Journal of Behavioral Robotics*, 7(1):40-54, December 2016.

- [31] Jimmy Baraglia, **Yukie Nagai**, and Minoru Asada, "Emergence of Altruistic Behavior Through the Minimization of Prediction Error," *IEEE Transactions on Cognitive and Developmental Systems*, 8(3):141-151, September 2016.
- [32] **Yukie Nagai**, "Investigating the Principle of Cognitive Developmental: Computational Models Based on Predictive Learning of Sensorimotor Information," *Baby Science*, 15:22-32, March 2016.
- [33] **Yukie Nagai**, "[Answer] Investigating the Principle of Cognitive Developmental: Computational Models Based on Predictive Learning of Sensorimotor Information," *Baby Science*, 15:37-45, March 2016.
- [34] Hiroshi Fukuyama, Shibo Qin, Yasuhiro Kanakogi, **Yukie Nagai**, Minoru Asada, and Masako Myowa-Yamakoshi, "Infant's action skill dynamically modulates parental action demonstration in the dyadic interaction," *Developmental Science*, 18(6):1006-1013, November 2015.
- [35] Emre Ugur, **Yukie Nagai**, Erol Sahin, and Erhan Oztop, "Staged Development of Robot Skills: Behavior Formation, Affordance Learning and Imitation with Motionese," *IEEE Transactions on Autonomous Mental Development*, 7(2):119-139, June 2015.
- [36] Emre Ugur, **Yukie Nagai**, Hande Celikkanat, and Erhan Oztop, "Parental scaffolding as a bootstrapping mechanism for learning grasp affordances and imitation skills," *Robotica*, 33(5):1163-1180, June 2015.
- [37] Yuji Kawai, Yuji Oshima, Yuki Sasamoto, **Yukie Nagai**, and Minoru Asada, "A model for syntactic development of children: Acquisition processes of syntactic categories reflecting structures of Japanese, English, and Chinese languages," *Cognitive Studies*, 22(3):475-479, September 2015.
- [38] **Yukie Nagai** and Katharina J. Rohlfing, "Computational Analysis of Motionese Toward Scaffolding Robot Action Learning," *IEEE Transactions on Autonomous Mental Development*, 1(1):44-54, May 2009.
- [39] **Yukie Nagai**, "Joint Attention Learning based on Early Detection of Self-Other Motion Equivalence with Population Codes," *Journal of the Robotics Society of Japan*, 25(5):727-737, July 2007.
- [40] **Yukie Nagai**, Minoru Asada, and Koh Hosoda, "Learning for joint attention helped by functional development," *Advanced Robotics*, 20(10):1165-1181, September 2006.
- [41] **Yukie Nagai**, "A Constructivist Approach to Understanding the Role of Movement in the Development of Joint Attention," *Cognitive Studies*, 13(3):480-483, September 2006.
- [42] **Yukie Nagai**, Koh Hosoda, Akio Morita, and Minoru Asada, "Emergence of Joint Attention through Bootstrap Learning based on the Mechanisms of Visual Attention and Learning with Self-evaluation," *Transactions of the Japanese Society for Artificial Intelligence*, 19(1):10-19, January 2004.
- [43] **Yukie Nagai**, Koh Hosoda, Akio Morita, and Minoru Asada, "A constructive model for the development of joint attention," *Connection Science*, 15(4):211-229, December 2003.
- [44] Koh Hosoda, **Yukie Nagai**, and Minoru Asada, "Bootstrap for Emergence of Joint Attention," *IEICE technical report: Neurocomputing*, 103(392):25-30, October 2003.
- [45] **Yukie Nagai**, Minoru Asada, and Koh Hosoda, "Acquisition of Joint Attention by a Developmental Learning Model based on Interactions between a Robot and a Caregiver," *Transactions of the Japanese Society for Artificial Intelligence*, 18(2):122-130, March 2003.

#### *Peer-Reviewed International Conferences (Full Paper)*

- [1] Jiarui Li, Michiko Matsunaga, Masako Myowa, and **Yukie Nagai**, "Recurrence Plot Analysis of Mother-Child Autonomic Nervous System Predict Mother's Stress," in *Proceedings of the 2023 IEEE International Conference on Development and Learning*, accepted, November 9-11, 2023.
- [2] Ming Li, Jiarui Li, Dan Zhang, and **Yukie Nagai**, "Prosody-Based Vocal Emotional Alignment in Infant-Caregiver Interaction," in *Proceedings of the 2023 IEEE International Conference on Development and Learning*, accepted, November 9-11, 2023.
- [3] Marco Gabriele Fedozzi, **Yukie Nagai**, Francesco Rea, and Alessandra Sciutti, "The Shape of Time: Exploring Temporal Representation in Neural Processes for Multimodal Action Prediction," in *Proceedings of the 9th Workshop on Artificial Intelligence and Cognition*, September 14-15, 2023.

- [4] Jiarui Li, Marisa Casillas, Sho Tsuji, and **Yukie Nagai**, "Multi-scale analysis of vocal coordination in infant-caregiver daily interaction," in Proceedings of the 2022 IEEE International Conference on Development and Learning, 164-169, September 12-15, 2022. (**SmartBot Challenge Finalist**)
- [5] Naoto Yoshida, Tatsuya Daikoku, **Yukie Nagai**, and Yasuo Kuniyoshi, "Embodiment Perspective of Reward Definition for Behavioral Homeostasis," in Proceedings of the NeurIPS 2021 Workshop on Deep Reinforcement Learning, December 13, 2021.
- [6] Anja Philippsen, Sho Tsuji, and **Yukie Nagai**, "Picture completion reveals developmental change in representational drawing ability: An analysis using a convolutional neural network," in Proceedings of the 10th IEEE International Conference on Development and Learning and on Epigenetic Robotics, October 26-30, 2020.
- [7] Stefan Heinrich, Tayfun Alpay, and **Yukie Nagai**, "Learning Timescales in Gated and Adaptive Continuous Time Recurrent Neural Networks," in Proceedings of the 2020 IEEE International Conference on Systems, Man, and Cybernetics, 2662-2667, October 11-14, 2020.
- [8] Anja Philippsen and **Yukie Nagai**, "A predictive coding model of representational drawing in human children and chimpanzees," in Proceedings of the 9th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 171-176, August 19-22, 2019.
- [9] Daniel Oliva, Anja Philippsen, and **Yukie Nagai**, "How development in the Bayesian brain facilitates learning," in Proceedings of the 9th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 253-259, August 19-22, 2019.
- [10] Anja Philippsen and **Yukie Nagai**, "Understanding the cognitive mechanisms underlying autistic behavior: a recurrent neural network study," in Proceedings of the 8th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 84-90, September 16-20, 2018.
- [11] Yihan Zhang and **Yukie Nagai**, "Proprioceptive Feedback Plays a Key Role in Self-Other Differentiation," in Proceedings of the 8th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 133-138, September 16-20, 2018.
- [12] Ahmet E. Tekden, Emre Ugur, **Yukie Nagai**, and Erhan Oztop, "Modeling the Development of Infant Imitation using Inverse Reinforcement Learning," in Proceedings of the 8th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 155-160, September 16-20, 2018.
- [13] Serkan Bugur, **Yukie Nagai**, Erhan Oztop, and Emre Ugur, "A Computational Model For Action Prediction Development," in Proceedings of the ICDL-EpiRob 2018 Workshop on Continual Unsupervised Sensorimotor Learning, September 17, 2018.
- [14] Takato Horii, **Yukie Nagai**, and Minoru Asada, "Active Perception based on Energy Minimization in Multimodal Human-robot Interaction," in Proceedings of the 5th International Conference on Human-Agent Interaction, 103-110, October 17-20, 2017. (**Best Student Paper Award**)
- [15] Konstantinos Theofilis, Jason Orlosky, **Yukie Nagai**, and Kiyoshi Kiyokawa, "Panoramic View Reconstruction for Stereoscopic Teleoperation of a Humanoid Robot," in Proceedings of the IEEE-RAS 16th International Conference on Humanoid Robots, 242-248, November 15-17, 2016.
- [16] Thomas Hermann, Jiajun Yang, and **Yukie Nagai**, "EmoSonics - Interactive Sound Interfaces for the Externalization of Emotions," in Proceedings of the 11th Audio Mostly: A Conference on Interaction with Sound, 61-68, October 4-6, 2016.
- [17] Jorge L. Copete, **Yukie Nagai**, and Minoru Asada, "Motor development facilitates the prediction of others' actions through sensorimotor predictive learning," in Proceedings of the 6th IEEE International Conference on Development and Learning and on Epigenetic Robotics, September 19-22, 2016.
- [18] Jimmy Baraglia, Maya Cakmak, **Yukie Nagai**, Rajesh Rao, and Minoru Asada, "Initiative in Robot Assistance during Collaborative Task Execution," in Proceedings of the 11th ACM/IEEE International Conference on Human-Robot Interaction, 67-74, March 7-10, 2016.
- [19] Lars Schillingmann and **Yukie Nagai**, "Yet Another Gaze Detector: An Embodied Calibration Free System for the iCub Robot," in Proceedings of the 15th IEEE-RAS International Conference on Humanoid Robots, 8-13, November 3-5, 2015.

- [20] **Yukie Nagai** and Minoru Asada, "Predictive Learning of Sensorimotor Information as a Key for Cognitive Development," in Proceedings of the IROS 2015 Workshop on Sensorimotor Contingencies for Robotics, October 2, 2015.
- [21] Oskar Palinko, Alessandra Sciutti, Lars Schillingmann, Francesco Rea, **Yukie Nagai**, and Giulio Sandini, "Gaze Contingency in Turn-Taking for Human Robot Interaction: Advantages and Drawbacks," in Proceedings of the 24th IEEE International Symposium on Robot and Human Interactive Communication, 369-374, August 31-September 4, 2015.
- [22] Jimmy Baraglia, Jorge L. Copete, **Yukie Nagai**, and Minoru Asada, "Motor Experience Alters Action Perception Through Predictive Learning of Sensorimotor Information," in Proceedings of the 5th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 63-69, August 13-16, 2015. (**Babybot Challenge 1st Place Award**)
- [23] **Yukie Nagai**, Takakazu Moriwaki, and Minoru Asada, "Influence of Excitation/Inhibition Imbalance on Local Processing Bias in Autism Spectrum Disorder," in Proceedings of the 37th Annual Meeting of the Cognitive Science Society, 1685-1690, July 23-25, 2015.
- [24] Lars Schillingmann, Joseph M. Burling, Hanako Yoshida, and **Yukie Nagai**, "Gaze is not Enough: Computational Analysis of Infant's Head Movement Measures the Developing Response to Social Interaction," in Proceedings of the 37th Annual Meeting of the Cognitive Science Society, 2104-2109, July 23-25, 2015.
- [25] Takato Horii, **Yukie Nagai**, Lorenzo Natale, Francesco Giovannini, Giorgio Metta, and Minoru Asada, "Compensation of Tactile Hysteresis using Gaussian Process with Sensory Markov Property," in Proceedings of the 14th IEEE-RAS International Conference on Humanoid Robots, Thu12-2.16, November 2014.
- [26] Yuji Kawai, Yuji Oshima, Yuki Sasamoto, **Yukie Nagai**, and Minoru Asada, "Computational model for syntactic development: Identifying how children learn to generalize nouns and verbs for different languages," in Proceedings of the 4th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 78-84, October 2014.
- [27] Yuji Kawai, Minoru Asada, and **Yukie Nagai**, "A model for biological motion detection based on motor prediction in the dorsal premotor area," in Proceedings of the 4th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 241-247, October 2014.
- [28] Jimmy Baraglia, **Yukie Nagai**, and Minoru Asada, "Prediction Error Minimization for Emergence of Altruistic Behavior," in Proceedings of the 4th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 273-278, October 2014.
- [29] Jorge L. Copete, **Yukie Nagai**, and Minoru Asada, "Development of goal-directed gaze shift based on predictive learning," in Proceedings of the 4th IEEE International Conference on Development and Learning and on Epigenetic Robotics, 334-339, October 2014.
- [30] Jun-Cheol Park, Dae-Shik Kim, and **Yukie Nagai**, "Developmental Dynamics of RNNPB: New Insight about Infant Action Development," in Proceedings of the 13th International Conference on Simulation of Adaptive Behavior, 144-153, July 2014.
- [31] Emre Ugur, **Yukie Nagai**, and Erhan Oztop, "Affordance based imitation bootstrapping with motionese," in Proceedings of the International Workshop on Developmental Social Robotics, 9-14, November 2013.
- [32] Emre Ugur, **Yukie Nagai**, and Erhan Oztop, "Parental scaffolding as a bootstrapping mechanism for learning grasp affordances and imitation skills," in Proceedings of the 22nd International Workshop on Robotics in Alpe-Adria-Danube Region, September 2013. (**Best Paper Research Award**)
- [33] Takato Horii, **Yukie Nagai**, and Minoru Asada, "Touch and Emotion: Modeling of developmental differentiation of emotion lead by tactile dominance," in Proceedings of the 3rd IEEE International Conference on Development and Learning and on Epigenetic Robotics, August 2013.
- [34] Jimmy Baraglia, **Yukie Nagai**, and Minoru Asada, "Action Understanding using an Adaptive Liquid State Machine based on Environmental Ambiguity," in Proceedings of the 3rd IEEE International Conference on Development and Learning and on Epigenetic Robotics, August 2013.

- [35] Anja K. Philippsen, Kai A. Mismahl, Britta Wrede, and **Yukie Nagai**, "Cross-Cultural Recognition of Auditive Feedback Using Echo State Networks," in Proceedings of 24. Konferenz zur Elektronischen Sprachsignalverarbeitung, March 2013.
- [36] **Yukie Nagai**, Akiko Nakatani, Shibo Qin, Hiroshi Fukuyama, Masako Myowa-Yamakoshi, and Minoru Asada, "Co-Development of Information Transfer within and between Infant and Caregiver," in Proceedings of the 2nd IEEE International Conference on Development and Learning and on Epigenetic Robotics, November 2012.
- [37] Minoru Asada, **Yukie Nagai**, and Hisashi Ishihara, "Why not artificial sympathy?," in Proceedings of the International Conference on Social Robotics, 278-287, October 2012.
- [38] Yuji Kawai, **Yukie Nagai**, and Minoru Asada, "Perceptual Development Triggered by its Self-Organization in Cognitive Learning," in Proceedings of the 2012 IEEE/RSJ International Conference on Intelligent Robots and Systems, 5159-5164, October 2012.
- [39] Yuji Kawai, Jihoon Park, Takato Horii, Yuji Oshima, Kazuaki Tanaka, Hiroki Mori, **Yukie Nagai**, Takashi Takuma, and Minoru Asada, "Throwing Skill Optimization through Synchronization and Desynchronization of Degree of Freedom," in Proceedings of the 16th Annual RoboCup International Symposium, June 2012. (**Research Award of the RoboCup Japan Open, Best Paper Award Finalist**)
- [40] Emre Ugur, Hande Celikkanat, Erol Sahin, **Yukie Nagai**, and Erhan Oztop, "Learning to Grasp with Parental Scaffolding," in Proceedings of the 11th IEEE-RAS International Conference on Humanoid Robots, 480-486, October 2011.
- [41] **Yukie Nagai**, Yuji Kawai, and Minoru Asada, "Emergence of Mirror Neuron System: Immature vision leads to self-other correspondence," in Proceedings of the 1st Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics, August 2011.
- [42] Marc Kammer, Marko Tscherepanow, Thomas Schack, and **Yukie Nagai**, "A Perceptual Memory System for Affordance Learning in Humanoid Robots," in T. Honkela, W. Duch, M. A. Girolami, and S. Kaski, editors, International Conference on Artificial Neural Networks, Lecture Notes in Computer Science, 6792:349-356, June 2011.
- [43] Go Tanaka, **Yukie Nagai**, and Minoru Asada, "Bottom-up Attention Improves Action Recognition Using Histograms of Oriented Gradients," in Proceedings of the 12th IAPR Conference on Machine Vision Applications, 467-470, June 2011.
- [44] **Yukie Nagai**, Akiko Nakatani, and Minoru Asada, "How a robot's attention shapes the way people teach," in Proceedings of the 10th International Conference on Epigenetic Robotics, 81-88, November 2010.
- [45] **Yukie Nagai**, "Stability and Sensitivity of Bottom-Up Visual Attention for Dynamic Scene Analysis," in Proceedings of the 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems, 5198-5203, October 2009.
- [46] **Yukie Nagai**, "From Bottom-Up Visual Attention to Robot Action Learning," in Proceedings of the 8th IEEE International Conference on Development and Learning, June 2009.
- [47] Anna-Lisa Vollmer, Katrin S. Lohan, Kerstin Fischer, **Yukie Nagai**, Karola Pitsch, Jannik Fritsch, Katharina J. Rohlfing, and Britta Wrede, "People Modify Their Tutoring Behavior in Robot-Directed Interaction for Action Learning," in Proceedings of the 8th IEEE International Conference on Development and Learning, June 2009.
- [48] **Yukie Nagai** and Katharina J. Rohlfing, "Parental Action Modification Highlighting the Goal versus the Means," in Proceedings of the 7th IEEE International Conference on Development and Learning, August 2008.
- [49] **Yukie Nagai**, Claudia Muhl, and Katharina J. Rohlfing, "Toward Designing a Robot that Learns Actions from Parental Demonstrations," in Proceedings of the 2008 IEEE International Conference on Robotics and Automation, 3545-3550, May 2008.

- [50] Claudia Muhl, **Yukie Nagai**, and Gerhard Sagerer, "On Constructing a Communicative Space in HRI," in *KI 2007: Advances in Artificial Intelligence (30th Annual German Conference on AI)*, J. Hertzberg, M. Beetz, and R. Englert (Eds.), Springer, 264-278, September 2007.
- [51] Claudia Muhl and **Yukie Nagai**, "Does Disturbance Discourage People from Communicating with a Robot?" in *Proceedings of the 16th IEEE International Symposium on Robot and Human Interactive Communication*, 1137-1142, August 2007. (**Best Paper Award Finalist**)
- [52] **Yukie Nagai** and Katharina J. Rohlfing, "Can Motionese Tell Infants and Robots "What to Imitate"?" in *Proceedings of the 4th International Symposium on Imitation in Animals and Artifacts*, 299-306, April 2007.
- [53] **Yukie Nagai**, "Learning to Comprehend Deictic Gestures in Robots and Human Infants," in *Proceedings of the 14th IEEE International Workshop on Robot and Human Interactive Communication*, 217-222, August 2005.
- [54] **Yukie Nagai**, "The Role of Motion Information in Learning Human-Robot Joint Attention," in *Proceedings of the 2005 IEEE International Conference on Robotics and Automation*, 2081-2086, April 2005.
- [55] **Yukie Nagai**, "Joint Attention Development in Infant-like Robot based on Head Movement Imitation," in *Proceedings of the Third International Symposium on Imitation in Animals and Artifacts*, 87-96, April 2005.
- [56] **Yukie Nagai**, Koh Hosoda, and Minoru Asada, "Joint Attention Emerges through Bootstrap Learning," in *Proceedings of the 2003 IEEE/RSJ International Conference on Intelligent Robots and Systems*, 168-173, October 2003.
- [57] **Yukie Nagai**, Koh Hosoda, and Minoru Asada, "How does an infant acquire the ability of joint attention?: A Constructive Approach," in *Proceedings of the 3rd International Workshop on Epigenetic Robotics*, 91-98, August 2003.
- [58] **Yukie Nagai**, Koh Hosoda, Akio Morita, and Minoru Asada, "Emergence of Joint Attention based on Visual Attention and Self Learning," in *Proceedings of the 2nd International Symposium on Adaptive Motion of Animals and Machines*, SaA-II-3, March 2003.
- [59] **Yukie Nagai**, Minoru Asada, and Koh Hosoda, "Developmental Learning Model for Joint Attention," in *Proceedings of the 2002 IEEE/RSJ International Conference on Intelligent Robots and Systems*, 932-937, October 2002.
- [60] **Yukie Nagai**, Minoru Asada, and Koh Hosoda, "A Developmental Approach Accelerates Learning of Joint Attention," in *Proceedings of the 2nd International Conference on Development and Learning*, 277-282, June 2002.
- [61] Ken Tomiyama and **Yukie Nagai**, "Distributed Management System with Hierarchical Structure for a Group of Mobile Robots," in *Proceedings of the 2nd International Workshop on Advanced Mechatronics*, 230-235, December 1997.

### *Tutorial and Review Papers*

- [1] **Yukie Nagai**, "Free Energy Principle and Cognitive Developmental Robotics," *Journal of the Japanese Society for Artificial Intelligence*, 38(6):826-832, November 2023.
- [2] **Yukie Nagai**, "Robotics for Understanding and Assisting Neurodiversity," *Kagaku*, 93(1):41-46, December 2022.
- [3] Alessandra Sciutti, Pablo Barros, Ginevra Castellano, and **Yukie Nagai**, "Editorial: Affective shared perception," *Frontiers in Integrative Neuroscience*, 16:1024267, September 2022.
- [4] **Yukie Nagai**, "Developmental vs. evolutionary origin of cooperation," *Baby Science*, 18:12-13, March 2019.
- [5] **Yukie Nagai**, "From Understanding to Assisting: Cognitive mirroring that makes developmental disorders observable," *Journal of Human Interface Society*, 21(1):5-10, February 2019.

- [6] **Yukie Nagai**, "Simulator of Atypical Perception in Autism Spectrum Disorder: Understanding difficulties in ASD from the first-person's perspective," *Tokubetsu Shien Kyoiku*, 734:23-25, October 2018.
- [7] Yasuo Kuniyoshi, **Yukie Nagai**, Yukuo Konishi, Masako Myowa, Shinichiro Kumagaya, Yoshiyuki Ohmura, and Hoshinori Kanazawa, "Constructive Developmental Science: Revealing the Principles of Development from Fetal Period and Systematic Understanding of Developmental Disorders," *Baby Science*, 17:10-21, March 2018.
- [8] **Yukie Nagai**, "Cognitive Mirroring: Assisting people with developmental disorders by means of self-understanding and social sharing of cognitive processes," *Seitai No Kagaku*, 69(1):63-67, February 2018.
- [9] **Yukie Nagai**, "Simulator of ASD Visual Perception," *Japanese Journal of Clinical Psychology: Extra Number* 9, 192-196, August 2017.
- [10] **Yukie Nagai**, "Importance and Open Issues of Sensorimotor Integration: Comments from Computational Approach," *Baby Science*, 16:50-51, March 2017.
- [11] **Yukie Nagai** and Takato Horii, "Computational Modeling of Emotion Based on Predictive Learning," *Artificial Intelligence*, 31(5):694-701, September 2016.
- [12] **Yukie Nagai**, "Simulator of Atypical Visual Perception in Autism Spectrum Disorder," *Psychiatric Mental Health Nursing*, 19(1):59-63, January 2016.
- [13] **Yukie Nagai**, "Cognitive Developmental Robotics toward Emergence of KANSEI in Robots," *Journal of Japan Society of Kansei Engineering*, 13(4):195-199, December 2015.
- [14] **Yukie Nagai**, "Can Robotics Reveal Mysteries about Human Infants?," *Baby Science*, 6:42-43, January 2007.
- [15] **Yukie Nagai**, "A Robotics Approach to Understanding the Development of Joint Attention," *HAT-TATSU*, 27(107):60-66, July 2006.

### Books

- [1] **Yukie Nagai**, "AI that Visualizes Developmental Disorders," *Society Interpreted by AI (in Japanese)*, UTokyo B' AI Global Forum, Yuko Itatsu, and Ai Hisano (Eds.), The University of Tokyo Press, March 2023.
- [2] **Yukie Nagai**, "Developmental Robotics," *Robotics Handbook (3rd edition) (in Japanese)*, The Robotics Society of Japan (Ed.), Corona Publishing, March 2023.
- [3] **Yukie Nagai**, "Social Cognition," *Cognitive Robotics*, A. Cangelosi and M. Asada (Eds.), MIT Press, May 2022.
- [4] **Yukie Nagai**, "Predictive Coding for Cognitive Development," *Encyclopedia of Robotics*, M. H. Ang, O. Khatib, and B. Siciliano (Eds.), Springer, May 2021.
- [5] **Yukie Nagai**, "8.8 Cognitive Development in Robots based on Predictive Coding," *Encyclopedia of Artificial Intelligence (third edition)*, H. Nakashima et al. (Eds.), Kindai Kagaku, 222-224, December 2019.
- [6] **Yukie Nagai**, "Mechanism for Cognitive Development," *Cognitive Neuroscience Robotics: A: Synthetic Approaches to Human Understanding*, M. Kasaki, H. Ishiguro, M. Asada, M. Osaka, and T. Fujikado (Eds.), Springer, 51-72, May 2016.
- [7] **Yukie Nagai**, "Development of Social Cognitive Functions Based on Predictive Learning of Sensorimotor Information," *Social Brain Living with Robots (in Japanese)*, N. Osaka (Ed.), Shinyosha, 211-242, December 2015.
- [8] Yuji Kawai, Jihoon Park, Takato Horii, Yuji Oshima, Kazuaki Tanaka, Hiroki Mori, **Yukie Nagai**, Takashi Takuma, and Minoru Asada, "Throwing Skill Optimization through Synchronization and Desynchronization of Degree of Freedom," *Lecture Notes in Computer Science, RoboCup 2012: Robot Soccer World Cup XVI*, X. Chen, P. Stone, L. E. Sucar, and T. v. d. Zant (Eds.), Springer, 7500:178-189, 2013.

- [9] Noriaki Mitsunaga, **Yukie Nagai**, Tomohiro Ishida, Taku Izumi, and Minoru Asada, "BabyTigers 2001: Osaka Legged Robot Team," Lecture Note in Artificial Intelligence, RoboCup 2001: Robot Soccer World Cup V, A. Birk, S. Coradeschi, and S. Tadokoro (Eds.), Springer, 685-688, August 2002.
- [10] Noriaki Mitsunaga, **Yukie Nagai**, and Minoru Asada, "BabyTigers: Osaka Legged Robot Team," Lecture Note in Artificial Intelligence, RoboCup 2000: Robot Soccer World Cup IV, P. Stone, T. Balch, and G. K. Kraetzschmar (Eds.), Springer, 631-634, June 2001.

### *Invited Talks at International Conferences*

- [1] **Yukie Nagai**, "TBD," The 27th Annual Meeting of the Association for the Scientific Study of Consciousness, Tokyo, Japan, July 2-5, 2024.
- [2] **Yukie Nagai**, "Predictive Processing: Illuminating and Modeling Cognitive Development," The IEEE World Congress on Computational Intelligence, Yokohama, Japan, June 30-July 5, 2024.
- [3] **Yukie Nagai**, "TBD," The IEEE International Conference on Development and Learning, Austin, TX, USA, May 20-23, 2024.
- [4] **Yukie Nagai**, "Predictive Processing for Robot Learning: What can we learn from cognitive science?," CoRL 2023 Workshop on Bridging the Gap between Cognitive Science and Robot Learning in the Real World: Progresses and New Directions, Atlanta, GA, USA, November 6, 2023.
- [5] **Yukie Nagai**, "Predictive Coding Account for Neurodiverse Minds," The 46th Annual Meeting of the Japan Neuroscience Society, Sendai, Japan, August 1-4, 2023.
- [6] **Yukie Nagai**, "Predictive Coding Theory for Social Intelligence," RSS 2023 Workshop on Social Intelligence in Humans and Robots, Daegu, Korea, July 10, 2023.
- [7] **Yukie Nagai**, "AI for Understanding Human Intelligence," UTokyo Global Unit Courses, Tokyo, Japan, June 19-30, 2023.
- [8] **Yukie Nagai**, "Predictive Coding and Social Cognition," ICRA 2023 Workshop on Cognitive Modeling in Robot Learning for Adaptive Human-Robot Interactions, London, UK, June 2, 2023.
- [9] **Yukie Nagai**, "Altered Predictive Processing in Neurodiverse Minds," IRCN Computational Psychiatry Workshop, Tokyo, Japan, March 31, 2023.
- [10] **Yukie Nagai**, "Stereotyped Minds and Diverse Minds," Tokyo College Lecture, Tokyo, February 20, 2023.
- [11] **Yukie Nagai**, "Embodiment as a Key to Realize "Beyond AI"," The 3rd International Symposium of the Institute for AI and Beyond, Tokyo, February 17, 2023.
- [12] **Yukie Nagai**, "Predictive Coding Account for Cognitive Development," IRCN-iPlasticity International Symposium, Tokyo, Japan, January 10-11, 2023.
- [13] **Yukie Nagai**, "Predictive Brain in Humans and Robots," Latin American Summer School on Cognitive Robotics, Santiago, Chile, January 3-6, 2023.
- [14] **Yukie Nagai**, "Predictive Coding for Cognitive Development in Humans and Robots," Workshop on the Ecology of Open-Ended Skill Acquisition, Bordeaux, France, December 7, 2022.
- [15] **Yukie Nagai**, "Cognitive Developmental Robotics," ShanghAI Lectures 2022, Online, November 24, 2022.
- [16] **Yukie Nagai**, "Developmental Machine Learning: Robots that learn like human children," IROS 2022 Workshop on Trends and Advances in Machine Learning and Automated Reasoning for Intelligent Robots and Systems, Kyoto, Japan, October 27, 2022.
- [17] **Yukie Nagai**, "Emergence of Social Cognition Through Open-Ended Predictive Learning," IROS 2022 Workshop on Lifelong Learning of High-level Cognitive and Reasoning Skills, Kyoto, Japan, October 23, 2022.



- [18] **Yukie Nagai**, “Robots as Mirrors of Human Mind,” Mind and Matter Talks 2022, University of Helsinki, Finland, October 14, 2022. (Online)
- [19] **Yukie Nagai**, “Robotics for Understanding and Assisting Neurodiversity,” The International Symposium on Robotics Research, Geneva, Switzerland, September 25-30, 2022.
- [20] **Yukie Nagai**, “How to Build Developing Minds,” Seminar Series at Honda Research Institute Europe, Offenbach, Germany, September 21, 2022.
- [21] **Yukie Nagai**, “AI as a Tool for Investigating Human Intelligence,” The 5th Advanced Course on Data Science & Machine Learning, Castelnovo Berardenga, Tuscany, Italy, August 22-26, 2022.
- [22] **Yukie Nagai**, “Predictive Brain and Its Disorders: A computational approach to understanding early cognitive development,” SFB-TRR 135 - Retreat, Ebsdorfergrund, Germany, July 18-21, 2022.
- [23] **Yukie Nagai**, “Cognitive Developmental Robotics: An embodied computational approach to neuroscience,” Nencki School of Ideas in Neuroscience, Warsaw, Poland, July 3-8, 2022.
- [24] **Yukie Nagai**, “How to Build Developing Minds,” Japanese-German Conference “Artificial Intelligence and the Human - Cross-Cultural Perspectives on Science and Fiction,” Berlin, Germany, May 11-13, 2022. (**Keynote talk**)
- [25] **Yukie Nagai**, “Developmental Diversity in Drawing: Robots vs. Children,” AI and Society Series: Robotics and Embodiment, Online, April 12, 2022.
- [26] **Yukie Nagai**, “AI for Understanding Human Intelligence,” The 2nd International Symposium of the Institute for AI and Beyond, Tokyo, February 12, 2022. (Online)
- [27] **Yukie Nagai**, “Predictive Processing in the Brain: Computational Models of Cognitive Development and Disorders,” The 8th Baltic-Nordic Summer School on Neuroscience and Neuroinformatics, Stockholm, Sweden, September 21-25, 2021. (Online)
- [28] **Yukie Nagai**, “Robots as Mirrors of Human Cognition,” The 30th IEEE International Conference on Robot and Human Interactive Communication, Vancouver, Canada, August 8-12, 2021. (Online) (**Keynote talk**)
- [29] **Yukie Nagai**, “Predictive Coding in Autism Spectrum Disorder: New insights from computational studies,” The 44th Annual Meeting of the Japan Neuroscience Society / The 1st CJK International Meeting, Kobe, Japan, July 28-31, 2021.
- [30] **Yukie Nagai**, “Visual Hyper- and Hypo-sensitivity in ASD: Environmental and Neural Causes for Atypical Perception,” International Conference on Applications of Virtual Reality in Autism Research, Glasgow, UK, May 12-14, 2021. (Online) (**Keynote talk**)
- [31] **Yukie Nagai**, “Predictive Coding Account of Cognitive Development: Toward Development of Decision Making,” Tenth International Symposium on Biology of Decision Making, Paris, France, May 10-12, 2021. (Online)
- [32] **Yukie Nagai**, “AI for Understanding and Assisting Human Intelligence,” The University of Tokyo B’AI Global Forum “AI and Society”, Tokyo, April 22, 2021. (Online)
- [33] **Yukie Nagai**, “Roles of Embodiment in Cognitive Development,” International Workshop on Embodied Intelligence, Cambridge, UK, March 24-26, 2021. (Online)
- [34] **Yukie Nagai**, “Robot Intelligence Inspired by Human Intelligence,” IEEE International Conference on Intelligence and Safety for Robotics, Nagoya, Japan, March 4-6, 2021. (Online) (**Keynote talk**)
- [35] **Yukie Nagai**, “Predictive Coding: A Unified Theory for Human and Robot Cognitive Development,” Seminar Series on Cognitive Robotics at Queen Mary University of London, London, UK, February 5, 2021. (Online)
- [36] **Yukie Nagai**, “Computational modeling of cognitive development based on predictive coding,” Leap Brainstorm, January 20, 2021. (Online)

- [37] **Yukie Nagai**, "Does Predictive Coding Provide a Unified Theory of Artificial Intelligence?," International Joint Conference on Artificial Intelligence - Pacific Rim International Conference on Artificial Intelligence, Yokohama, Japan, January 7-15, 2021. (Online)
- [38] **Yukie Nagai**, "Cognitive Development Based on Predictive Coding," Workshop on "Neural Control: From Data to Machines", Göttingen, Germany, November 5 - December 17, 2020. (Online)
- [39] **Yukie Nagai**, "Artificial Intelligence as a Mirror of Human Intelligence," 2nd French-German-Japanese Symposium on Human-centric Artificial Intelligence, Tokyo, Japan, November 16-20, 2020. (Online)
- [40] **Yukie Nagai**, "Development of Perception, Action, and Learning Based on Predictive Coding," ICDL-EpiRob 2020 Workshop on Affective Shared Perception, Valparaíso, Chile, October 30, 2020. (Online)
- [41] **Yukie Nagai**, "Cognitive Development in Humans and Robots: New Insights into Intelligence," 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems, Las Vegas, USA, October 25-November 25, 2020. (Online) **(Plenary talk)**
- [42] **Yukie Nagai**, "Cognitive Development Based on Predictive Coding," International Symposium on Artificial Intelligence and Brain Science, Tokyo, Japan, October 10-12, 2020. (Online)
- [43] **Yukie Nagai**, "Cognitive development based on predictive coding," Cross Roads #16, Tokyo, September 25, 2020. (Online)
- [44] **Yukie Nagai**, "Typical and Atypical Consciousness Based on Predictive Coding," Consciousness Club, Tokyo, January 17, 2020.
- [45] **Yukie Nagai**, "Predictive Coding as a Computational Theory for Open-Ended Cognitive Development," IROS 2019 Workshop on Open-Ended Learning for Object Perception and Grasping: Current Successes and Future Challenges, Macau, China, November 8, 2019.
- [46] **Yukie Nagai**, "The Now and Future of Cognitive Developmental Robotics," The Third Conference on Robot Learning, Osaka, Japan, October 30-November 1, 2019. **(Keynote talk)**
- [47] **Yukie Nagai**, "[Lecture 1] Beyond self: From non-social to social development in robots; [Lecture 2] Atypical self: A computational account for developmental disorder," Autumn School of German Scientific Priority Program on "The Active Self", Herrsching, Germany, October 23-27, 2019.
- [48] **Yukie Nagai**, "An interdisciplinary approach to human and robot cognition," CITEC Conference "Cognitive Interaction Technology meets AI", Bielefeld, Germany, October 24-25, 2019.
- [49] **Yukie Nagai**, "What robots tell us about human cognition: Predictive coding theory," Opening Conference of ZiF research group "Situation models: Interfacing perception and memory for cognitive behavior", Bielefeld, Germany, October 9-11, 2019.
- [50] **Yukie Nagai**, "Where do social difficulties come from?: Predictive coding account for autism," HAI 2019 Workshop on Clinical Use of Technology for Individuals with Autism Spectrum Disorder, Kyoto, Japan, October 6, 2019.
- [51] **Yukie Nagai**, "AI that simulates and assists people with autism spectrum disorder," Nature Conference on "AI & Robotics", Shenzhen, China, September 2-3, 2019.
- [52] **Yukie Nagai**, "Predictive coding account for emotion," ICDL-EpiRob 2019 Workshop on Naturalistic Non-Verbal and Affective Human-Robot Interactions, Oslo, Norway, August 19, 2019.
- [53] **Yukie Nagai**, "Cognitive Development in Robots: A unified theory based on predictive coding," The 8th International Conference on Biomimetic and Biohybrid Systems, Nara, Japan, July 9-12, 2019. **(Plenary talk)**
- [54] **Yukie Nagai**, "Predictive Learning as a Computational Principle for Early Cognitive Development," The Fourth International Workshop on Intrinsically Motivated Open-ended Learning, Frankfurt, Germany, July 1-3, 2019.
- [55] **Yukie Nagai**, "What Robotics Tells About Human Development and Its Disorders," RSS 2019 Workshop on Women in Robotics V, Freiburg, Germany, June 23, 2019.

- [56] **Yukie Nagai**, "Computational Models of Predictive Coding for Robot Cognitive Development," RSS 2019 Workshop on Advances in Neuro-Robotics, Freiburg, Germany, June 22, 2019.
- [57] **Yukie Nagai**, "Predictive coding account for social cognitive development and its disorders," Marcus Wallenberg International Symposium on Affective and Developmental Processes in Cognitive and Autonomous Systems - Augmenting Deep Learning using Neural Dynamics and Predictive Coding, Gothenburg, Sweden, May 6-7, 2019.
- [58] **Yukie Nagai**, "Development of social cognition in robots," Behaviors.ai 2nd Annual Workshop, Lyon, France, April 10, 2019.
- [59] **Yukie Nagai**, "Development of social cognition in robots," JST-CREST / IEEE-RAS Spring School on "Social and Artificial Intelligence for User-Friendly Robots", Shonan Village, Japan, March 17-24, 2019.
- [60] **Yukie Nagai**, "Cognitive Mirroring: A Computational Approach to Understanding and Assisting Autism Spectrum Disorder," The 2nd Workshop on Social Robots in Therapy and Care, Daegu, Korea, March 11, 2019.
- [61] **Yukie Nagai**, "Computational Models of Predictive Coding for Social Cognitive Development in Robots," The 4th Joint UAE Symposium on Social Robotics, Abu Dhabi and Al Ain, UAE, February 3-6, 2019.
- [62] **Yukie Nagai**, "Predictive Learning: A computational theory of social cognitive development," International Research Center for Neurointelligence (IRCN) 2nd International Symposium, Tokyo, Japan, December 17, 2018.
- [63] **Yukie Nagai**, "Cognitive Mirroring: Computational Approach to Developmental Disorders," Artificial Intelligence - International Research and Applications: 1st Japanese-German-French DWIH Symposium, Tokyo, Japan, November 21-22, 2018.
- [64] **Yukie Nagai**, "Predictive Learning: Neuro-inspired mechanism for social cognitive development in robots," The 4th Congress on Robotics and Neuroscience, Valparaíso, Chile, November 15-17, 2018.
- [65] **Yukie Nagai**, "Biologically-inspired cognitive architecture for human-robot collaboration," IROS 2018 Workshop on Human-Robot Cooperation and Collaboration in Manipulation: Advancements and Challenges, Madrid, Spain, October 5, 2018.
- [66] **Yukie Nagai**, "The self-other within predictive learning," IROS 2018 Workshop on the utility of body, interaction and self learning in robotics, Madrid, Spain, October 1, 2018.
- [67] **Yukie Nagai**, "Where and Why Infants Look: A computational account for the development of visual attention," ICDL-EpiRob 2018 Workshop on Active Vision, Attention, and Learning, Tokyo, Japan, September 17, 2018.
- [68] **Yukie Nagai**, "Impact of Social Interaction on Affordance Learning," The 1st International Workshop on Computational Models of Affordance in Robotics, Pittsburgh, USA, June 30, 2018.
- [69] **Yukie Nagai**, "Robots that Learn to Interact with Others Like Infants," University of Twente, Enschede, Netherlands, February 22, 2018.
- [70] **Yukie Nagai**, "Predictive Learning: A computational theory that accounts for social cognitive development," Paderborn University, Paderborn, Germany, February 20, 2018.
- [71] **Yukie Nagai**, "Predictive Learning: A computational theory that accounts for social cognitive development," Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, February 16, 2018.
- [72] **Yukie Nagai**, "Predictive Learning: Computational theory that solves the puzzle of cognitive development," The 1st International Symposium on Systems Intelligence Division, Osaka, January 20-21, 2018.
- [73] **Yukie Nagai**, "Mental Simulation Based on Crossmodal Learning," ICDL-EpiRob2017 Workshop on Computational Models for Crossmodal Learning, Lisbon, Portugal, September 18, 2017.

- [74] **Yukie Nagai**, "Development of Social Self through Predictive Learning," ICDL-EpiRob2017 Workshop on the Development of the Self: from self-perception to interaction under uncertainty, Lisbon, Portugal, September 18, 2017.
- [75] **Yukie Nagai**, "Predictive Coding for Robot Cognition," International Symposium on Neuroscience of Consciousness: Beyond NCC, Chiba, Japan, July 24, 2017.
- [76] **Yukie Nagai**, "Computational models for cognitive development," ISSA Summer School 2017, Osaka, May 22-June 2, 2017.
- [77] **Yukie Nagai**, "Predictive Learning: A Computational Account for Social Cognitive Development," Lorentz Center Workshop "Perspectives on Developmental Robotics", Leiden, the Netherlands, May 15-19, 2017.
- [78] **Yukie Nagai**, "Cognitive Mirroring: Computational Approach to Understanding and Assisting Autism Spectrum Disorder," International Symposium on Constructive Approach to Cognitive Development and Disorders, Bielefeld University, Bielefeld, Germany, March 13, 2017.
- [79] **Yukie Nagai**, "Predictive learning: Its key role in cognitive development," The 3rd International Symposium on Cognitive Neuroscience Robotics: Toward Constructive Developmental Science, Osaka, Japan, December 11-13, 2016.
- [80] **Yukie Nagai**, "Predictive Learning: A Computational Theory for Cognitive Development," Lecture at Radboud University, Nijmegen, Netherlands, November 10, 2016.
- [81] **Yukie Nagai**, "Learning with motionese: Human-robot interaction inspired by caregiver-infant interaction," IROS 2016 Workshop on Human-Robot Collaboration: Towards Co-Adaptive Learning Through Semi-Autonomy and Shared Control, Daejeon, Korea, October 10, 2016.
- [82] **Yukie Nagai**, "From cognition to social interaction based on predictive learning," IROS 2016 Workshop on Bio-inspired Social Robot Learning in Home Scenarios, Daejeon, Korea, October 10, 2016.
- [83] **Yukie Nagai**, "Predictive learning: A unified theory for cognitive development," International Workshop on Robotics in the 21st century: Challenges and Promises, Volpriehausen, Germany, September 25-28, 2016.
- [84] **Yukie Nagai**, "A Computational Approach to Predictive Learning Account for Cognitive Development," ICDL-EpiRob 2016 Workshop on Predictive Processing and Infant Development: The Current State-of-the-art, Cergy-Pontoise, France, September 19, 2016.
- [85] **Yukie Nagai**, "Predictive learning for robot cognition," EuroScience Open Forum "Cognition in humans and robots," Manchester, UK, July 23-27, 2016.
- [86] **Yukie Nagai**, "Intention reading and collaboration based on mirror neuron system," HRI 2016 Workshop on Intention Recognition in Human-Robot Interaction, Christchurch, New Zealand, March 7, 2016.
- [87] **Yukie Nagai**, "Emergence of mirror neuron system through predictive learning," The 2nd International Symposium on Cognitive Neuroscience Robotics: Before and Beyond Mirror Neurons, Osaka, Japan, February 23, 2016.
- [88] **Yukie Nagai**, "How ASD sees the world: Computational approaches to understanding atypical perception," International Workshop on Cognitive Development for Friendly Robots and Rehabilitation, Genoa, Italy, December 2-3, 2015.
- [89] **Yukie Nagai**, "Predictive Learning of Sensorimotor Information as a Key for Cognitive Development," Humanoids 2015 Workshop on Towards Intelligent Social Robots - Current Advances in Cognitive Robotics, Seoul, Korea, November 3, 2015.
- [90] **Yukie Nagai**, "Predictive learning as a key for cognitive development: New insights from developmental robotics," EAP CogSci 2015 Symposium on Cognitive Development and Architectures for Cognitive Robotics, Turin, Italy, September 25-27, 2015.
- [91] **Yukie Nagai**, "Emergence of self awareness in robot based on predictive learning," ISSA Summer School, Kobe, Japan, August 10, 2015.

- [92] **Yukie Nagai**, "Predictive Learning of Sensorimotor Information as a Key for Cognitive Development," ICAR 2015 Workshop on Robot Learning: Bottom-up and top-down development of robot skills, Istanbul, Turkey, July 31, 2015.
- [93] **Yukie Nagai**, "Predictive Learning of Sensorimotor Information as a Key for Cognitive Development," Open Lecture on Cognitive Interaction Design, Kyoto Institute of Technology, Kyoto, Japan, July 12, 2015.
- [94] **Yukie Nagai**, "Predictive Learning as a Key for Cognitive Development: New Insights from Developmental Robotics," Workshop on Cognitive Science and Robotics: New Approaches to Human Cognition and Robotics, University of Houston, Houston, USA, March 23, 2015.
- [95] **Yukie Nagai**, "Prediction Error Minimization: An Underlying Mechanism for the Emergence of Behavioral Coordination," HRI 2015 Workshop on Behavior Coordination between Animals, Humans and Robots, Portland, USA, March 2, 2015.
- [96] **Yukie Nagai**, "Predictive Learning as a Key for Cognitive Development," International Workshop on Cognitive Neuroscience Robotics, Osaka, Japan, December 2014.
- [97] **Yukie Nagai**, "Predictive Learning as a Key for Cognitive Development: New Insight from Developmental Robotics," Plymouth University CRNS Seminars, Plymouth, UK, October 2014.
- [98] **Yukie Nagai**, "Predictive Learning as a Key for Cognitive Development: New Insight from Developmental Robotics," Heriot-Watt University's MACS Computer Science Seminar Series, Edinburgh, UK, October 2014.
- [99] **Yukie Nagai**, "What can robotics teach us about infant development?: Contingency learning as a key for cognitive development," Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany, July 2014.
- [100] **Yukie Nagai**, "Computational Methods to Analyze the Dynamics of Infant-Caregiver Interaction," ICIS 2014 Pre-Conference on Head-Mounted Eye Tracking, Berlin, Germany, July 2014.
- [101] **Yukie Nagai**, "An Interaction-Based Development of Human-Robot Joint Attention and Self/Other Cognition," International Conference: Going Beyond the Laboratory - Ethical and Societal Challenges for Robotics, Delmenhorst, Germany, February 2014.
- [102] **Yukie Nagai**, "What can robotics teach us about self-other recognition?," CiNet Friday Lunchtime Seminar Series, CiNet, Osaka, Japan, January 2014.
- [103] **Yukie Nagai**, "Designing Teachable Robots: How to take multidimensionality of mind perception into account?," IROS 2013 Workshop on Towards Social Humanoid Robots: What makes interaction human-like?, Tokyo, Japan, November 2013.
- [104] **Yukie Nagai**, "Contingency as a key for cognitive development: From self-other recognition to joint attention," IROS 2013 Workshop on Cognitive Robotics Systems: Replicating Human Actions and Activities, Tokyo, Japan, November 2013.
- [105] **Yukie Nagai**, "Development of Self through Other: Emergence of Mirror Neuron System and Social Interaction," RobotDoc International Conference on Development of Cognition, Osaka, Japan, August 2013.
- [106] **Yukie Nagai**, "Developmental Robotics to Investigate Interpersonal Coordination," CogSci 2013 Workshop on Embodied Approaches to Interpersonal Coordination: Infants, Adults, Robots, and Agents, Berlin, Germany, July 2013.
- [107] **Yukie Nagai**, "How social interaction shapes the way robots learn," HRI 2013 Workshop on Collaborative Manipulation: New Challenges for Robotics and HRI, Tokyo, Japan, March 2013.
- [108] **Yukie Nagai**, "Can Robots Learn to Communicate like Infants?," Houston University, Houston, TX, USA, November 2012.
- [109] **Yukie Nagai**, "The Importance of Starting Small in Robot Learning: Lessons from Human Intelligence," The 15th International Conference on Artificial Intelligence: Methodology, Systems, Applications, Varna, Bulgaria, September 2012.

- [110] **Yukie Nagai**, “How Interaction Shapes the Way Robots Learn,” AIMS 2012 Workshop on Advances in Robot Learning and Human-Robot Interaction, Varna, Bulgaria, September 2012.
- [111] **Yukie Nagai**, “Robots That Learn to Communicate with Humans,” Workshop on Intelligent Human-Machine Collaboration, The National Academy of Sciences, Washington DC, USA, June 2012.
- [112] **Yukie Nagai**, “Reading Intentions from Motionese: Analyzing and Designing Caregiver-Infant Interaction,” Workshop on “Reading intentions: From children to robots,” Lund, Sweden, March 2012.
- [113] **Yukie Nagai**, “Mutual Shaping between Caregivers’ Scaffolding and Infants’ Development: New Insights from Cognitive Developmental Robotics,” The 12th Winter Workshop on Mechanism of Brain and Mind, Rusutsu Resort Hotel, Hokkaido, Japan, January 2012.
- [114] **Yukie Nagai**, “What Should Robots Learn from Caregiver-Infant Interaction?,” ShanghAI Lecture, October 2011.
- [115] **Yukie Nagai**, “The Role of Maturation Constraints in Infant Development,” AGAI Club, Bielefeld University, Germany, June 2011.
- [116] **Yukie Nagai**, “My Research Stay in Bielefeld,” Forschungsfoerderung im deutsch-japanischen Austausch, Japan Week, Bielefeld University, Germany, June 2011.
- [117] **Yukie Nagai**, “Researchers’ Life in Osaka,” All about Osaka University, Japan Week, Bielefeld University, Germany, June 2011.
- [118] **Yukie Nagai**, “How a robot’s attention shapes the way people teach: Bottom-up vs. top-down attention,” CoR-Lab colloquium, Bielefeld University, Germany, October 2010.
- [119] **Yukie Nagai**, “Investigating Pedagogy by Modeling Infant Visual Attention,” Workshop at the Annual Meeting of the Cognitive Science Society ‘Intuitive Pedagogical Reasoning: An Interdisciplinary Workshop,’ Amsterdam, Netherlands, July 2009.
- [120] **Yukie Nagai**, “A Developmental Approach to Robot Action Learning,” Cognitive Sciences Brown Bags, University of Zurich, Switzerland, December 2008.
- [121] **Yukie Nagai**, “Visual Action Structuring by Motionese,” Workshop on ‘Intermodal Action Structuring,’ Bielefeld, Germany, July 2008.
- [122] **Yukie Nagai**, “Human-Robot Communications: A Constructivist Approach to Understanding the Human Communication Mechanism,” INPRO Kolloquium, Berlin, Germany, June 2006.
- [123] **Yukie Nagai**, “The Role of Movement in the Development of Joint Attention: A Robotic Approach,” in Proceedings of the 15th International Conference on Infant Studies, Kyoto, Japan, June 2006.
- [124] **Yukie Nagai**, “Robots that learn to establish joint visual attention,” PRI Cooperative Research Workshop “Gaze, Joint Attention, and Theory of Mind,” Aichi, Japan, August 2005.
- [125] **Yukie Nagai**, “Cognitive Developmental Modeling of Joint Attention,” International Workshop on Processes of Communication, Bielefeld, Germany, February 2005.