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**Date of birth:** July 13, 1961

**Education:**

1980-1984 B.S., Engineering, University of Tokyo  
1984-1986 M.S., Engineering, University of Tokyo  
1994 Ph.D., Engineering, University of Tokyo

**Professional Positions:**

1986-1991 Instructor, University of Tokyo  
1991-1993 Visiting Researcher, University of California, San Diego  
1993-1994 Research Associate, The Salk Institute  
1994-2003 Senior Researcher, Advanced Telecommunication Research Institute International (ATR)  
1995-2006 Visiting Associate Professor, Nara Institute of Science and Technology (NAIST)  
1996-1999 Group Leader, Dynamic Brain Project, Japan Science and Technology Corporation (JST)  
1999-2005 Research Director, Metalearning and Neuromodulation Project, JST  
2003-2011 Department Head, ATR Computational Neuroscience Laboratories  
2004- Principal Investigator, Okinawa Institute of Science and Technology (OIST)  
2006-2015 Visiting Professor, NAIST  
2010- Adjunct Professor, Kyoto University  
2011- Professor, Neural Computation Unit, OIST Graduate University  
2011-2014 Vice Provost for Research OIST Graduate University  
2011- Program Director, Prediction and Decision Making, MEXT  
2012- Scientific Technical Committee, Italian Institute of Technology  
2013- Visiting Professor, Tamagawa University  
2015- Visiting Researcher, National Institute of Advanced Industrial Science and Technology (AIST)

**Social Services:**

1999-2002 Vice President, Japanese Neural Network Society  
1999-2003 Director, Neuro-Informatics Summer School  
2004- Co-organizer, Okinawa Computational Neuroscience Course  
2008- Co-editor in Chief, Neural Networks  
2009-2011 Board of Governors, International Neural Network Society  
2010 Program Chair, 33rd Annual Meeting of Japan Neuroscience Society  
2011 Executive Chair, 21st Annual Conference of Japanese Neural Network Society

**Awards:**

2000, 2003, 2005, 2006 Best Paper Awards, Japanese Neural Network Society  
2007 JSPS Award, Japan Society for Promotion of Science  
2007 Tsukahara Award, Brain Science Foundation  
2012 MEXT Prize for Science and Technology  
2013 College of Fellows, International Neural Network Society

## **Representative Publications**

- Elfwing S, Uchibe E, Doya K (2015). Expected energy-based restricted Boltzmann machine for classification. *Neural networks*, 64, 29-38.
- Ito M, Doya K (2015). Distinct neural representation in the dorsolateral, dorsomedial, and ventral parts of the striatum during fixed- and free-choice tasks. *Journal of Neuroscience* 35:3499-3514.
- Miyazaki KW, Miyazaki K, Tanaka KF, Yamanaka A, Takahashi A, Tabuchi S, Doya K (2014). Optogenetic activation of dorsal raphe serotonin neurons enhances patience for future rewards. *Current Biology*, 24(17), 2033-2040.
- Elfwing S, Uchibe E, Doya K, Christensen HI (2011). Darwinian embodied evolution of the learning ability for survival. *Adaptive Behavior*, 19, 101-120.
- Miyazaki K, Miyazaki KW, Doya K (2011). Activation of dorsal raphe serotonin neurons underlies waiting for delayed rewards. *Journal of Neuroscience*, 31, 469-479.
- Ito M, Doya K (2009). Validation of decision-making models and analysis of decision variables in the rat basal ganglia. *Journal of Neuroscience*, 29, 9861-9874.
- Doya K (2008). Modulators of decision making. *Nature Neuroscience*, 11, 410-416.
- Samejima K, Ueda K, Doya K, Kimura M (2005). Representation of action-specific reward values in the striatum. *Science*, 301, 1337-1340.
- Tanaka SC, Doya K, Okada G, Ueda K, Okamoto Y, Yamawaki S (2004). Prediction of immediate and future rewards differentially recruits cortico-basal ganglia loops. *Nature Neuroscience*, 7(8), 887-893.
- Doya K (2002). Metalearning and neuromodulation. *Neural Networks*, 15, 495-506.
- Doya K. (2000). Reinforcement learning in continuous time and space. *Neural Computation*, 12, 219-245.
- Doya K (1999). What are the computations of the cerebellum, the basal ganglia, and the cerebral cortex. *Neural Networks*, 12, 961-974.
- Doya K., Selverston A.I. (1994). Dimension reduction of biological neuron models by artificial neural networks. *Neural Computation*, 6, 696-717.
- Doya K., Yoshizawa S. (1989). Adaptive neural oscillator using continuous-time back-propagation learning. *Neural Networks*, 2, 375-386.