Sungho Jo

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RESEARCH AREAS
- Computational intelligence
- Intelligent system design
- Bio-inspired robotics, neurobotics
- Human robot interaction
- Computational neuroengineering / biomechanics
- Neural control and learning of movements etc.

EDUCATION

Massachusetts Institute of Technology   Cambridge MA USA
Doctor of Philosophy in Electrical Engineering and Computer Science   May 2006
(Thesis committee: Steve Massaquoi, Hugh Herr, Rodney Brooks)

Financial Technology Option in Sloan School of Management   Feb. 2006

Master of Science in Mechanical Engineering   June 2001

Seoul National University   Seoul Korea
Bachelor of Science in Engineering   Aug. 1999
School of Mechanical & Aerospace Engineering

EXPERIENCE

Assistant Professor   Dec. 2007 to Present
Division of Computer Science, KAIST
KI for Information Technology Convergence, *KI for Design of Complex Systems*

Postdoctoral Associate   July 2006 to Nov. 2007
MIT Media Laboratory

Research Assistant   July 2001 to May 2006
Computer Science and Artificial Intelligence Laboratory(CSAIL),
Laboratory for Information and Decision Systems(LIDS),
MIT and MIT-Harvard HST NeuroEngineering Research Collaborative

Teaching Assistant   Fall Term 2003, Fall Term 2004
HST.574, Introduction to Neuroengineering, MIT

Summer Internship   Summer 2004
Samsung Economics Research Institute

Research Assistant   Sept. 1999 to June 2001
Man Vehicle Laboratory (MVL), MIT

HONORS/RECOGNITIONS
- Fernando J Corbato (1956) fellowship, MIT 2006
- Harold E Edgerton (1927) fellowship, EECS, MIT 2005, 2006
- EECS graduate alumni fellowship, MIT 2005
- Shillman (1974) fellowship, EECS, MIT 2004
- MIT Presidential fellowship 1999
- Cited in Who's Who in America 2008(62nd Ed.), Marquis Who's Who.

PUBLICATIONS
- Sungho Jo, Steve Massaquoi (2007), A model of cerebrocerebello-spinomuscular interaction in the sagittal control of human walking, Biological Cybernetics, 96(3):279-307.
- Sungho Jo, Steve Massaquoi (2004), A model of cerebellum-stabilized and scheduled hybrid long-loop control of upright balance, Biological Cybernetics, 91(3):188-202.
- Sungho Jo, Jijun Yin, Zhi-Hong Mao (2005), Random neural networks with state-dependent firing neurons, IEEE Transactions on Neural Networks, 16(4): 980-983.
- Sungho Jo (2005), A robust approach to the PDF estimate, Neurocomputing, 67C: 288-296.
- Sungho Jo (2007), A neurobiological model of the recovery strategies from perturbed walking, BioSystems, 90(3): 750-768.
- Sungho Jo (2007), Hypothetical neural control of human biped locomotion with voluntary modulation, Medical & Biological Engineering & Computing.
- Sungho Jo (2008), Adaptive biomimetic control of robot arm motions, Neurocomputing.
- Sungho Jo, Andreas Hofmann (2007), Biped walking from neurological and biomechanical principles, In: Biological Cybernetics Research Trends (ed.: T.O. Williams), Nova Science Publishers, inc.
- Sungho Jo, Zhi-Hong Mao (2007), Basal ganglionic learning applied to control of an underactuated system, In: Neurocomputing Research Developments (Ed: H.A. Svensson), Nova Science Publishers, inc.
- Steve Massaquoi, Sungho Jo, Kazutaka Takahashi (2007), Cerebro-cerebellar implementation of gainscheduled feedback control, Proceedings of 45th annual Atterton conference on communication, control, and computing, UIUC.

PATENTS

- Computer-implemented model of the central nervous system, US patent pending, 2007 (with SG Massaquoi, Z-H Mao).

TALKS/PRESENTATIONS/SEMINARS
- Hierarchical neural control of human bipedal walking, Samsung Mechatronics Center, Suwon, Korea, May 2007.
- Neuro-musculo-skeletal model of human biped walking, LG Electronics Institute of Technology, Seoul, Korea, May 2007.
- Hierarchical neural system model of cerebrocerebell-spinomuscular interaction in human biped walking, Mechanical Engineering, Korea University, Seoul Korea, May 2007.
- An example of neuro-musculo-skeletal system modeling: human biped walking, Department of Electronics Engineering, Yonsei University, Seoul Korea, May 2007.
- An integrated model of hierarchical sagittal control of human balance and walking, Society for Neuroscience, annual meeting, 2006.
- Neural control of sagittal plane bipedal locomotion without internal models of body dynamics, XXVIII international symposium of computational neuroscience, Montreal, Canada, June 2006.
- Feasibility of RIPID control model of human bipedal walking, 16th annual meeting of the Neural Control of Movement Society, Key Biscayne, FL, May 2006.
- Neural control of human walking, student workshops, Robotics Center at MIT, 2006.
- A FRIPID cerebrocerebellar balance control model, Computational and Systems Biology at MIT, 2006.
- A model of cerebellum-mediated long loop control of upright Balance, Society for Neuroscience, 32nd annual meeting, Orlando, FL, Nov 2002.

JOURNAL ACTIVITIES
- Reviewer of IEEE Trans. on Robotics, Medical & Biological Engineering & Computing, International Journal of Robotics Research etc.