CURRICULUM VITAE

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Ph.D. Candidate
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[EDUCATION]

2006 – Pres.	Ph.D. Candidate	**Dept. of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology (KAIST)** *Relevant Courses : Computational Neuroscience*
2002 – 2006	B.S. (*Summa Cum Laude*)	**Dept. of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology (KAIST)** *Relevant Courses : Introduction to Bioengineering, General Biochemistry, General Cell Biology, Mathematical Modeling and Simulation, Biomechanics and Analysis, Systems Bioengineering, Computer System, Neural Information Processing Algorithm, Biological Signal Processing, Biological Instrumentation Laboratory, Biotechnology Experiment, Computational geometry*

[SKILLS]

Programming skills in MATLAB, C/C++, Java, and Perl. Experienced in fMRI and EEG experimental design and data analysis; AFNI, EEGLAB, and LORETA.

[RESEARCH EXPERIENCE]

2006 – Pres.	Graduate Research	Brain Dynamics Laboratory, Dept. of BioSystems, KAIST *Neural correlates of emotion & cognition in ultimatum game. – supervised under Jaeseung Jeong, Ph.D.*
2006 – Pres.	Graduate Research	Brain Dynamics Laboratory, Dept. of BioSystems, KAIST *Neural correlates of disappointment and elation & Emotion-based prediction of reward and reward-based learning in human decision making. – supervised under Jaeseung Jeong, Ph.D.*
2006 – 2006	Graduate Research	Brain Dynamics Laboratory, Dept. of BioSystems, KAIST *Nonlinear analysis including approximate entropy, correlation dimension, lyapunov exponent, power-law exponent, and nonlinear interdependence of tic dynamics in Tourette Syndrome patients. – supervised under Jaeseung Jeong, Ph.D.*
2005 – 2006	Graduate Research	Brain Dynamics Laboratory, Dept. of BioSystems, KAIST *Nonlinear analysis of hippocampus local field potentials*

		(LFPs) in serotonin 1A receptor deficient mice. . – supervised under Jaeseung Jeong, Ph.D.
2005 – 2006	Internship	NicolelisLab, Dept. of Neurobiology, Biomedical Engineering, and Psychological and Brain Sciences, and Center for Neuroengineering, Duke University Medical Center *Study of brain computer interface (BCI). Analysis of local field potential (LFP) signal for prediction of motor timing in monkey. – supervised under Miguel A. L. Nicolelis, M.D., Ph.D.*
2004 – Pres.	Undergraduate Research	Brain Dynamics Laboratory, KAIST *Study of nonlinear dynamics, chaos theory, and addiction. Approximate entropy analysis in methamphetamine dependent patients. – supervised under Jaeseung Jeong, Ph.D.*

[RESEARCH INTERESTS]

Reward, Decision-making, Addiction, and Nonlinear Dynamics
Understanding the neural bases of decision making in strategic interaction
Computational modeling of neural networks underlying reward and learning
Behavioral game theory and neuroeconomics
Theoretical neuroscience with reinforcement learning, nonlinear dynamics, information theory
Functional neuroimaging data analysis including fMRI and EEG

[AWARDS]

2007	Best Poster Award, Korean College of Neuropsychopharmacology
2006	Young Investigator's Competition 10 Finalist Award, International Federation for Medical and Biological Engineering (IFMBE)
2003	Global Leader Scholarship, KAIST Scholarship for top freshmen
2001	ETRI Scholarship, Electronics and Telecommunications Research Institute Scholarship for top high school students

[PUBLICATION]

<u>Journals</u>

Kyongsik Yun*, Hee-Kwon Park*, Do-Hoon Kwon, Sung-Nam Cho, Hyun-Jin Cho, Jaeseung Jeong. "Approximate Entropy Analysis of the EEG in Methamphetamine-dependent Patients" (in preparation)

* the first two authors contributed equally to this article and ordering was determined arbitrary

Seungyeon Kim, **Kyongsik Yun**, and Jaeseung Jeong. "Emotion-based prediction of reward

and reward-based learning in human decision making" (in preparation)

Conference Papers and Presentations

Kyongsik Yun, Dongil Chung, Seungyeon Kim, Hansol Kim, Koeun Lim, Sumin Chang, Jaeseung Jeong. "Electrophysiological Correlates of Faireness in Human Decision-Making", *Organization for Human Brain Mapping*. Chicago, Illinois, USA, June 10 – 14, 2007, Poster Presentation

Kyongsik Yun, Hee-Kwon Park, Do-Hoon Kwon, Sung-Nam Cho, Hyun-Jin Cho, Jaeseung Jeong. "Decreased Cortical Complexity in Methamphetamine Abusers", *Korean College of Neuropsychopharmacology*. Seoul, Republic of Korea, March 16 – 17, 2007, Poster Presentation

Seungyeon Kim, **Kyongsik Yun**, and Jaeseung Jeong. "Neural Correlates of Disappointment in Decision-making in Wheel of Numbers Task: an Event Related fMRI Study", *9th Annual Meeting of the Korean Society for Brain and Neural Science.* Seoul, Republic of Korea, November 2 – 3, 2006, Poster Presentation

Seungyeon Kim, **Kyongsik Yun**, and Jaeseung Jeong. "Neural Correlates of Disappointment and Elation in Decision-making", *Society for Neuroeconomics 2006 Annual Conference.* Park City, Utah, USA, September 7 – 10, 2006, Poster Presentation

Kyongsik Yun, H.K. Park, D.H. Kwon, S.N Cho, J. Jeong. "Decreased Complexity of the EEG in Patients with Methamphetamine Dependence", *IFMBE Proceedings: World Congress on Medical Physics and Biomedical Engineering*. Vol. 14, Seoul, Republic of Korea, August 27 – September 1, 2006, Oral Presentation

Kyongsik Yun, M. A. Lebedev, M. A. L. Nicolelis. "Prediction of Motor Timing using Nonlinear Analysis of Local Field Potentials", *IFMBE Proceedings: World Congress on Medical Physics and Biomedical Engineering*. Vol. 14, Seoul, Republic of Korea, August 27 – September 1, 2006, Oral Presentation

Patents

2001 **Kyongsik Yun**, "Sliding Door Security System", patent No. 0316385, Korea.

[RESEARCH PROJECT]

11/06 – 10/09 **Investigation for Brain Dynamics on Emotion-based Human Decision-making using fMRI and EEG**
Korea Science and Engineering Foundation (KOSEF)
Participating Investigators

05/06 – 04/09 **Development of Early Diagnostic System for Dementias via Simultaneous Measurement of EEG and fMRI**
Korea Advanced Institute of Science and Technology (KAIST)
Participating Investigators

[WORKING EXPERIENCE]

09/06 – Pres. Teaching Assistant, Undergraduate Research Program
Korea Advanced Institute of Science and Technology (KAIST)

03/06 – Pres. Teaching Assistant, Department of BioSystems
Korea Advanced Institute of Science and Technology (KAIST)

03/06 – 09/06 Teaching Assistant, Science Journalism
Korea Advanced Institute of Science and Technology (KAIST)

[REFERENCES]

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Department of Psychiatry
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