

Curriculum Vitae

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Byoung-Kyong Min, Ph.D.

Associate Professor
Department of Brain and Cognitive Engineering
Korea University, Seoul 02841, Korea

<http://min.korea.ac.kr>
min_bk@korea.ac.kr

Tel: +82-2-3290-5928
Fax: +82-2-3290-3678



Current Research Interest

1. Cognitive neuroscience (top-down process, consciousness / EEG, MEG, fMRI)
2. Non-invasive neuro-modulation (transcranial current stimulation, focused ultrasound)
3. Cognitive brain-machine interface

Publications

Journal articles (*corresponding author, †equally-contributing first authors)

1. Ahn MH, Hong SK, Min BK*, 'The absence of resting-state high-gamma cross-frequency coupling in patients with tinnitus' *Hearing Research*, 356, Dec 2017, pp. 63-73
2. Min BK*, Suk HI, Ahn MH, Lee MH, Lee SW, 'Individual Identification using Cognitive Electroencephalographic Neurodynamics' *IEEE Transactions on Information Forensics and Security*, 12 (9), Sep 2017, pp. 2159-2167
3. Min BK*, Ricardo CL, Millán JdR, 'Harnessing prefrontal cognitive signals for brain-machine interfaces' *Trends in Biotechnology*, 35 (7), July 2017, pp. 585-597
4. Min BK*, Dähne S, Ahn MH, Noh YK, Müller KR, 'Decoding of top-down cognitive processing for SSVEP-controlled BMI' *Scientific Reports*, 6, 36267, November 2016, doi: 10.1038/srep36267
5. Hong SK, Park SJ, Ahn MH, Min BK*, 'Top-down and bottom-up neurodynamic evidence in patients with tinnitus' *Hearing Research*, 342, Dec 2016, pp. 86-100
6. Baek HC, Min BK*, 'Blue light aids in coping with the post-lunch dip: An EEG study' *Ergonomics*, 58 (5), May 2015, pp. 803-810
7. Chang JW†, Min BK†*, Kim BS, Chang WS, Lee YH, 'Neurophysiologic correlates of sonication treatment in patients with essential tremor' *Ultrasound in Medicine and Biology*, 41 (1), Jan 2015, pp. 124-131
8. Kim HS, Min BK, Park DH, Hawi S, Kim BJ, Czosnyka Z, Czosnyka M, Sutcliffe M, Kim DJ, 'Porohyperelastic Anatomical models for hydrocephalus and idiopathic intracranial hypertension' *Journal of Neurosurgery*, 122 (6), June 2015, pp. 1330-1340
9. Min BK*, Müller KR, 'Electroencephalography/sonication-mediated human brain-brain interfacing technology' *Trends in Biotechnology*, 32 (7), July 2014, pp. 345-346

10. Min BK^{†,*}, Cho KS[†], Sung JY, Cho E, 'Neurophysiological evidence for the country-of-origin effect: an event-related potential study' *NeuroReport*, 25 (4), Mar. 2014, pp. 274-278
11. Min BK^{†,*}, Jung YC[†], Kim ES, Park JY*, 'Bright illumination reduces parietal EEG alpha activity during a sustained attention task' *Brain Research*, 1538, November 2013, pp. 83-92
12. Park JY[†], Min BK^{†,*}, Jung YC*, Pak HS, Jeong YH, Kim ES, 'Illumination influences working memory: an EEG study' *Neuroscience*, 247, September 2013, pp. 386-394
13. Yoo SS, Kim HM, Min BK, Franck E, Park SS, 'Transcranial focused ultrasound to the thalamus alters anesthesia time in rats' *NeuroReport*, 22 (15), 2011, pp. 783-787
14. Min BK, Kim SJ, Park JY, Park HJ, 'Prestimulus top-down reflection of obsessive-compulsive disorder in EEG occipital alpha and frontal theta oscillations' *Neuroscience Letters*, 496, May 2011, pp. 181-185
15. Bystritsky A, Korb AS, Douglas PK, Cohen MS, Melega WP, Mulgaonkar AP, Desalles A, Min BK, Yoo SS, 'A review of low intensity focused ultrasound pulsation' *Brain Stimulation*, 4 (3), 2011, pp. 125-136
16. Min BK, Bystritsky A, Jung KI, Fischer K, Zhang Y, Maeng LS, Park SI, Chung YA, Jolesz FA, Yoo SS, 'Focused ultrasound-mediated suppression of chemically-induced acute epileptic EEG activity' *BMC Neuroscience*, 2011, 12:23
17. Min BK, Yang PS, Bohlke M, Park SS, Vago DR, Maher TJ, Yoo SS, 'Focused ultrasound modulates the level of cortical neurotransmitters: Potential as a new functional brain mapping technique' *International Journal of Imaging Systems and Technology*, 21 (2), 2011, pp. 232-240
18. Yoo SS, Bystritsky A, Lee JH, Zhang Y, Fischer K, Min BK, McDannold N, Pascual-Leone A, Jolesz F, 'Focused ultrasound modulates region-specific brain activity' *NeuroImage*, 56 (3), 2011, pp. 1267-1275
19. Min BK, Marzelli M, Yoo SS, 'Neuroimaging-based approaches in brain-computer interface' *Trends in Biotechnology*, 28 (11), November 2010, pp. 552-560
20. Park HD, Min BK, Lee KM, 'EEG oscillations reflect visual short-term memory processes for the change detection in human faces' *NeuroImage*, 53 (2), 2010, pp. 629-637
21. Min BK, Park HJ, 'Task-related modulation of anterior theta and posterior alpha EEG reflects top-down preparation' *BMC Neuroscience*, 2010, 11: 79
22. Min BK, 'A thalamic reticular networking model of consciousness' *Theoretical Biology & Medical Modelling*, 2010, 7: 10
23. Min BK, 'Spectral analysis of brain oscillatory activity' *Korean Journal of Cognitive Science*, 20 (2), June 2009, pp. 155-181
24. Min BK, Park JY, Kim EJ, Kim JI, Kim JJ, Park HJ, 'Prestimulus EEG alpha activity reflects temporal expectancy' *Neuroscience Letters*, 438 (3), June 2008, pp. 270-274
25. Herrmann CS, Pauen M, Min BK, Busch NA, Riger JW, 'Analysis of a choice-reaction task yields a new interpretation of Libet's experiments' *International Journal of Psychophysiology*, 67 (2), February 2008, pp. 151-157
26. Min BK, Herrmann CS, 'Prestimulus EEG alpha activity reflects prestimulus top-down processing' *Neuroscience Letters*, 422 (2), July 2007, pp. 131-135
27. Min BK, Busch NA, Debener S, Kranczioch C, Hanslmayr S, Engel AK, Herrmann CS, 'The best of both worlds: phase-reset of human EEG alpha activity and additive power contribute to ERP

generation' *International Journal of Psychophysiology*, 65 (1), July 2007, pp. 58-68

28. Choi JM, Bae BH, Min BK, Kim SY, 'The analysis of brain activity in wakefulness and deep sleep states from a dog EEG' *Journal of the Korean Physical Society*, 30 (2), April 1997, pp. 328-333

Book chapter and Booklet

1. Choi K, Min BK* (2015) 'Future directions for brain-machine interfacing technology' In Lee SW et al. (eds.), *Recent Progress in Brain and Cognitive Engineering*. Volume 5 of the series *Trends in Augmentation of Human Performance* pp. 3-18, Heidelberg: Springer, Germany (Print ISBN 978-94-017-7238-9)
2. Min BK (2013) 'Light-induced Synchronization of the SCN', Lambert Academic Publishing, Germany (ISBN 978-3-659-34240-0)
3. Min BK (2012) 'The top-down function of prestimulus EEG alpha activity', Lambert Academic Publishing, Germany (ISBN 978-3-659-24774-3)
4. Min BK (2012) 'The present and future of Brain-Computer interface' In Hong SW, Jang DY (ed.), "Neuroscience, over the border", Bada Press, Seoul, Korea (ISBN 89-55616-51-1)
5. Herrmann CS, Pauen M, Min BK, Busch NA, Rieger J (2005) 'Eine neue interpretation von Libets experimenten aus der analyse einer wahlreaktionsaufgabe' In Herrmann CS, Pauen M, Rieger J, Schickanz S (ed.), "*Bewusstsein (Consciousness)*", pp. 120-134, Utb. Germany (ISBN 3-8252-2686-7)
6. Min BK (2000) 'MIND' (Neuroscience E-book in Korean PDF version), Mind21, Seoul, Korea (ISBN 89-89350-00-X)

Abstracts and Conference proceedings (*corresponding author)

1. Min BK*, Choi KM, Kim HS, Ahn MH, 'Enhanced working-memory performance by cross-frequency coupled transcranial alternative current stimulation' The 26th Annual Meeting of Cognitive Neuroscience Society, San Francisco, USA, March 2019
2. Kim JW, Kim MN, Kang DH, Ahn MH, Kim HS, Min BK*, 'An online top-down SSVEP-BMI for augmented reality' The 7th IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea, February 2019
3. Ahn MH, Kim JW, Min BK*, 'Selection of optimized EEG electrodes for BMIs using unsupervised learning' The Annual Conference of The Korean Institute of Communications and Information Sciences, Jeju, Korea, June 2018
4. Choi KM, Min BK*, 'Non-invasive neuromodulation' The Annual Conference of The Korean Institute of Communications and Information Sciences, Jeju, Korea, June 2018
5. Ahn MH, Min BK*, 'The minimal-electrode selection study for EEG-BMIs using a discriminability' The 32nd Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea, June 2018; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', June 2018
6. Kim JW, Ahn MH, Min BK*, 'A top-down SSVEP BMI embedded in a Microsoft Hololens' The 32nd Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea, June 2018; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', June 2018
7. Min BK*, 'A thalamo-cortical iterating model for consciousness' The 22nd Annual Meeting of Association for the Scientific Study of Consciousness, Krakow, Poland, June 2018

8. Min BK*, Ahn MH, Hong SK, 'Abnormal resting-state EEG cross-frequency coupling in patients with tinnitus' The 25th Annual Meeting of Cognitive Neuroscience Society, Boston, USA, March 2018
9. Choi KM, Choi SH, Lee SM, Jang KI, Chae JH, Min BK*, 'A six-week follow-up study of three-week rTMS treatment of patients with depression' The Brain and Artificial Intelligence symposium (Brain Engineering Society of Korea), Gangwondo, Korea, January 2018
10. Ahn MH, Min BK*, 'Applying deep-learning to a top-down SSVEP BMI' The 6th IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea, January 2018
11. Ahn MH, Min BK*, 'Brain-machine interfacing sensors using brainwave magnetic resonance' IEEE Sensors 2017, Glasgow, Scotland, UK, Oct.29-Nov.1, 2017
12. Ahn MH, Min BK*, 'SSVEP-based individual authentication' The 2nd Neural Engineering summer workshop (Brain Engineering Society of Korea), Busan, Korea, July 2017
13. Min BK*, 'Neuroscientific perspective of deep-learning' The 31st Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea, May 2017; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2017
14. Ahn MH, Min BK*, 'Top-down cognitive brain-fingerprint technology' The 31st Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea, May 2017; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2017
15. Ahn MH, Min BK*, 'Online Implementation of Top-Down SSVEP-BMI' The 5th IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea, January 2017
16. Ahn MH, Yang CH, Kim IS, Min BK*, 'Brain functional connectivity during the evaluation of product-preference' The 7th International Symposium on Brain and Cognitive Engineering, Seoul, Korea, July 2015; Printed in 'Proceedings of the Brain and Cognitive Engineering Symposium', July 2015, pp. 51-53
17. Min BK*, 'Top-down brain-machine interfacing technology' The 7th International Symposium on Brain and Cognitive Engineering, Seoul, Korea, July 2015
18. Ahn MH, Yang CH, Min BK*, 'Frontal cross-talk during the evaluation of preference' The 29th Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea, May 2015; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2015
19. Choi KW, Kim IS, Min BK*, 'A feedback training system using cognitive brain-computer interface' The 3rd IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea, January 2015
20. Min BK*, 'EEG/sonication-mediated human brain-brain interfacing technology' The 6th International Symposium on Brain and Cognitive Engineering, Tübingen, Germany, June 2014
21. Kim IS, So KS, Ryu MH, Min BK*, 'Sonication-mediated somatosensory experience' The 6th International Symposium on Brain and Cognitive Engineering, Tübingen, Germany, June 2014
22. So KS, Ryu MH, Min BK*, 'Human somatosensory experience using ultrasound sonication to the peripheral nervous system' The 28th Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea, May 2014; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2014
23. Oh SJ, Min BK*, 'RGB ratio of background light influences the arousal factor of emotion' The 44th Annual Meeting of *Society for Neuroscience*, Washington, USA, November 2014

24. Choi KW, Min BK*, 'A brain-computer interfacing system using prefrontal EEG signals' IEEE International conference on Systems, Man, and Cybernetics, San Diego, USA, October 2014
25. Baek HC, Kim IS, Pak HS, Jeong YH, Min BK*, 'Blue light modulates EEG alpha activity' The 21st Annual Meeting of Cognitive Neuroscience Society, Boston, USA, April 2014
26. Min BK*, Cho E, Cho KS, Sung JY, 'EEG theta-band phase-coupling for the country-of-origin effect' The 21st Annual Meeting of *Cognitive Neuroscience Society*, Boston, USA, April 2014
27. Noh YK, Min BK*, 'Feature Selection for Brain-Computer Interface Using Nearest Neighbor Information' The 2nd IEEE International Winter Workshop on Brain-Computer Interface, High1 Resort, Korea, February 2014
28. Choi JH, So KS, Kim IS, Min BK*, 'Phase coherence of EEG theta activity in the semantic processing of the country-of-origin' The 20th International Conference on Neural Information Processing, Daegu, Korea, November 2013
29. Oh SJ, Pak HS, Jung YH, Lee JS, Min BK*, 'RGB-modulated illumination influences prestimulus EEG alpha activity during an emotion task' The 12th Annual Meeting of *the International Colour Society (AIC)*, The Sage Gateshead, UK, July 2013
30. Min BK*, 'EEG/Sonication-based Brain-Brain Interfacing' The IEEE International Winter Workshop on Brain-Computer Interface, High1 Resort, Korea, February 2013
31. So KS, Ryu MH, Pak HS, Jung YH, Oh SJ, Min BK*, 'The event-related potentials reflect the perceptive interaction between colorful stimuli and RGB-modulated background illumination' The 20th Annual Meeting of *Cognitive Neuroscience Society*, San Francisco, USA, April 2013; *Journal of Cognitive Neuroscience (Supplement)* p. 232
32. Oh SJ, Pak HS, Jung YH, So KS, Ryu MH, Min BK*, 'Red light promotes the Aversive evaluation of unpleasant stimuli: An EEG study' The 20th Annual Meeting of *Cognitive Neuroscience Society*, San Francisco, USA, April 2013; *Journal of Cognitive Neuroscience (Supplement)* p. 245
33. Min BK*, Jung YC, Pak HS, Jung YH, Kim ES, Park JY, 'Bright lightning reduces parietal EEG alpha activity during the continuous performance task' The 33rd International Conference on Cognitive Science, Penang, Malaysia, December 2012
34. Min BK*, 'EEG correlates of a background illumination condition on human cognitive processing' The 12th China-Japan-Korea Joint Workshop on Neurobiology and Neuroinformatics, Seoul, Korea, November 22-23, 2012
35. Min BK*, Cho KS, Sung JY, Cho E, 'EEG signals reflect the effect of the country of origin on product preference' The 42th Annual Meeting of *Society for Neuroscience*, New Orleans, USA, October 2012
36. Nam YJ, Min BK, Hong UP, 'Syntactic indeterminacy effects on semantic integration in on-line sentence comprehension - An ERP study on Korean' The Annual Conference of *The Architectures and Mechanisms for Language Processing*, Riva del Garda, Italy, September 2012
37. Min BK*, Park JY, Kim ES, Jung YC, 'Bright lightning reduces frontal EEG theta activity during the Sternberg memory task' The 16th annual meeting of the Association for the Scientific Study of Consciousness, Brighton, UK, July 2012
38. Nam YJ, Min BK*, Hong UP, 'An ERP Study on the semantic integration in on-line language processing' The 26th Annual Conference of *The Korean Society for Cognitive Science*, Seoul, Korea, June 2012; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', June 2012
39. Min BK*, Cho KS, Sung JY, Cho E, 'Nation-branding alters product preference: an EEG study' The 26th Annual Conference of *The Korean Society for Cognitive Science*, Seoul, Korea, June 2012;

Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', June 2012

40. Min BK*, Park JY, Kim ES, Jung YC, 'The effect of illumination on a cognitive task performance: An EEG study' The 26th Annual Conference of *The Korean Society for Cognitive Science*, Seoul, Korea, June 2012; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', June 2012
41. Min BK*, 'Brain-Brain Interface' The 4th International Symposium on Brain and Cognitive Engineering, Seoul, Korea, May 2012
42. Yoo SS, Bystritsky A, Lee JH, Zhang Y, Fischer K, Min BK, McDannold N, Jolesz F, Pascual-Leone A, 'TMS1.1 Noninvasive brain stimulation using focused ultrasound' The 14th European Congress of Clinical Neurophysiology and the 4th International Conference on Transcranial Magnetic and Direct Current Stimulation, Rome, Italy, June 2011; *Clinical Neurophysiology*, 122 (S1), pp. S52-S53
43. Yoo SS, Pascual-Leone A, Min BK, Fischer K, Yang PS, Jolesz F, 'Computer-controlled, image-guided focused ultrasound system for neuromodulation' The 7th World Stroke Congress, Seoul, Korea, October 2010
44. Yoo SS, Bystritsky A, Lee JH, Zhang Y, Min BK, Fischer K, McDannold N, Jolesz F, Pascual-Leone A, 'Localized Modulation of Brain Function using Pulsed Low-intensity Focused Ultrasound' The 16th Annual Meeting of *Human Brain Mapping*, Barcelona, Spain, June 2010, p. 4
45. Min BK, Kim SJ, Park JY, Park HJ, 'Prestimulus top-down reflection of obsessive-compulsive disorder in EEG frontal theta and occipital alpha bands' The 39th Annual Meeting of *Society for Neuroscience*, Chicago, USA, October 2009
46. Min BK, Park HJ, 'EEG frontal alpha and occipital gamma activities of congenitally blind subjects during mental rotation' The 23rd Annual Conference of *The Korean Society for Cognitive Science*, Seoul, Korea, May 2009; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2009
47. Min BK, Kim JJ, Park HJ, 'Prestimulus EEG frontal theta and occipital alpha activities reflect prestimulus top-down processing' The 16th Annual Meeting of *Cognitive Neuroscience Society*, San Francisco, USA, March 2009; Printed in 'Cognitive Neuroscience Society Annual Meeting Program 2009' *Journal of Cognitive Neuroscience (Supplement)* p. 71 (B46)
48. Min BK, Han KJ, Min JH, Kim JH, Park HJ, 'Frontal N270 and decision making on a social contextual task' The 11th Conference of *Korean Society for Human Brain Mapping*, Seoul, Korea, Nov 2008
49. Park BH, Min BK, Park HJ, 'Plasticity of neural networks for working memory processing in the congenitally blind' The 11th Conference of *Korean Society for Human Brain Mapping*, Seoul, Korea, Nov 2008
50. Min BK, Lee DH, Park SY, Kim JI, Park HJ, 'Prestimulus EEG theta activity reflects prestimulus top-down inhibitory processing' The 11th Conference of *Korean Society for Human Brain Mapping*, Seoul, Korea, Nov 2008
51. Kim JI, Min BK, Park HJ, 'Sleep in congenital blind and normal subjects: analyses of spectral power and sLORETA' The 11th Conference of *Korean Society for Human Brain Mapping*, Seoul, Korea, Nov 2008
52. Lee NY, Lee YJ, Min BK, Kim JH, Park HJ, 'What happens in your brain when you look at newspaper company logos: An event-related potential study' The 11th Conference of *Korean Society for Human Brain Mapping*, Seoul, Korea, Nov 2008
53. Min BK, Park JY, Kim SJ, Park HJ, 'The relationship between prestimulus EEG alpha activity and top-down inhibitory processing in obsessive-compulsive disorder patients' The 38th Annual

Meeting of *Society for Neuroscience*, Washington, DC, USA, November 2008

54. Lee DH, Park JY, Min BK, Park HJ, 'The difference of EEG gamma oscillation between consonant and dissonant chord' The 38th Annual Meeting of *Society for Neuroscience*, Washington, DC, USA, November 2008
55. Min BK, Park HJ, 'EEG alpha and gamma activity in congenitally blind subjects during mental rotation' The 10th International Conference on Cognitive Neuroscience, Bodrum, Turkey, September 2008; *Frontiers in Human Neuroscience* doi: 10.3389/conf.neuro.09.2009.01.130
56. Min BK, Lee JH, Han KJ, 'EEG alpha activity reflects social contextual processing during a color-matching task' The 6th International Conference of Cognitive Science, Seoul, Korea, July 2008
57. Min BK, Kim JI, Seo BS, Chun JW, Park HI, Kim JJ, Park HJ, 'Involvement of the visual association cortex in congenitally blind subjects during mental imagery' The 6th International Conference of Cognitive Science, Seoul, Korea, July 2008
58. Min BK, Kim JJ, Park HJ, 'Prestimulus EEG alpha activity reflects temporal expectancy' The 15th Annual Meeting of *Cognitive Neuroscience Society*, San Francisco, USA, April 2008; Printed in 'Cognitive Neuroscience Society Annual Meeting Program 2008' *Journal of Cognitive Neuroscience (Supplement)* p. 48 (A110)
59. Min BK, Kim JI, Kim JJ, Park HJ, 'Expectation in prestimulus EEG alpha activity' The 9th Conference of *Korean Society for Human Brain Mapping*, Seoul, Korea, Nov 2007; Printed in 'The Autumn Conference of Korean Society for Human Brain Mapping' p. 37
60. Min BK, Busch NA, Debener S, Engel AK, Herrmann CS, 'Evoked Visual Alpha activity reflects Cognitive processing' The 11th Annual Meeting of *Cognitive Neuroscience Society*, San Francisco, USA, April 2004; Printed in 'Cognitive Neuroscience Society Annual Meeting Program 2004' *Journal of Cognitive Neuroscience (Supplement)* p. 81 (B141)
61. Min BK, Busch NA, Debener S, Engel AK, Herrmann CS, 'Differentiating Evoked and Induced Visual Alpha activity by Exogenous parameters' The 14th *Evoked Potentials International Conference (EPIC XIV)*, University of Leipzig, Germany, March 2004; Printed in 'Evoked Potentials International Conference XIV: Leipzig Series in Cognitive Sciences 5' (A. Widmann et al., eds) p. 110 *Leipziger Universitätsverlag*
62. Min BK, Kim MS, Youn T, Kim JJ, Kwon JS, 'Event-Related Potentials of a Linguistic Binding Process in a Korean Monosyllabic Word' The 32nd Annual Meeting of *Society for Neuroscience*, Orlando, USA, November 2002; Published at online *2002 Abstract Viewer/Itinerary Planner*. Program No. 279.7. Washington, DC: Society for Neuroscience
63. Min BK, Kim MS, Youn T, Kim JJ, Kwon JS, 'Event-Related Potentials of a Monosyllabic Word' The 16th Annual Conference of *The Korean Society for Cognitive Science*, Busan, Korea, May 2002; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2002, pp. 211-215
64. Min BK, Park HJ, Kang DH, Youn T, Kim MS, Kwon JS, 'Time-frequency analysis of 40Hz in oddball paradigm in schizophrenia: Preliminary study' The 44th Annual conference of *Korean Neuropsychiatric Association*, Seoul, Korea, October 2001

Educations

2003 Jan-2007 Jul	Ph.D. in Psychology (Advisor: Prof. Dr. Christoph Herrmann) Department of Biological Psychology, Institute for Psychology Otto-von-Guericke University Magdeburg, Germany
1997 Sep-1998 Jun	M.Sc. in Neurobiology and Physiology (Advisor: Prof. Fred Turek, Ph.D.) Department of Neurobiology and Physiology (NSF Bio-timing Lab.)

Northwestern University, The Graduate School, IL, USA

1990 Mar –1994 Feb Seoul National University, Korea
B.S. (Forest Science/ Chemistry)

Ph.D./M.Sc. Theses

1. Min BK, 'The top-down function of prestimulus EEG alpha activity' (*Magdeburg University* (Germany), Department of Biological Psychology, Ph.D. Thesis: July 4, 2007)
2. Min BK, 'Light-induced Synchronization of the Suprachiasmatic Neural Network: Converting Glutamate to GABA' (*Northwestern University* (USA), The Graduate School, Department of Neurobiology and Physiology, M.S. Thesis: June 19, 1998)

Professional Experience

2018 Sep-2019 Aug Visiting Scholar
McGovern Institute for Brain Research
MIT, Boston, USA

2012 Mar-2017 Aug Assistant Professor
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea

2011 Sep-2012 Feb Research Assistant Professor
Institute of Behavioral Sciences in Medicine
Yonsei University, College of Medicine (Severance Hospital), Seoul, Korea

2011 May-2011 Aug Research fellow
Institute of Behavioral Sciences in Medicine
Yonsei University, College of Medicine (Severance Hospital), Seoul, Korea

2009 Nov-2011 Mar Research fellow (Department of Radiology)
Harvard Medical School, Brigham and Women's Hospital
75 Francis street, Boston, MA 02115, USA

2007 Oct-2009 Sep Post-doctoral fellow (Advisor: Prof. Jae-Jin Kim, M.D./Ph.D. and Prof. Hae-Jeong Park, Ph.D.)
Brain Korea 21 project for Medical Science (Neuroscience unit)
Yonsei University, College of Medicine (Severance Hospital), Seoul, Korea

2002 Jul-Aug DAAD-KOSEF Summer Research Institute Program
Otto-von-Guericke University Magdeburg, Germany

2001 Sep-2002 Nov Interdisciplinary Program in Cognitive Science
(Advisor: Prof. Jun-Soo Kwon, M.D., Ph.D.)
Seoul National University, Korea

2001 May-2003 May Neuroscience Research Institute, Medical Research Center
College of Medicine, Seoul National University, Korea

2001 Mar-2002 Aug Clinical Research Institute
Seoul National University Hospital, Korea

1996 summer Johns Hopkins University, MD, USA
The Zanvyl Krieger Mind/Brain Institute
(Short-term visiting 'computational neuroscience lab')

1996 Mar-Aug Korea Advanced Institute of Science and Technology (KAIST)
Department of Physics, Brain Lab.
(Advisor: Prof. Soo-Yong Kim, Ph.D.)

Other Professional Experiences and Activities

2018	SPARK KU-MAGIC advisory board member (Medical Applied R&D Global Initiative Center at Korea University)
2018	The director of the auditing affairs, Korean Society for Cognitive Science
2018 Jan 30-Feb 1	Program Committee, 2018 Brain and AI Symposium, Brain Engineering Society of Korea, HoengSung, Korea
2018 Jan 15-17	Program Committee, 6th IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea
2017 Nov 2-3	<i>Publicity co-chair</i> , 2017 International Symposium on Perception, Action, and Cognitive Systems (PACS2017): Next Generation AI Engineer House, Seoul National University, Korea
2017 Oct 13-15	<i>Program chair</i> , 2017 Autumn School for Cognitive Science The Korean Society for Cognitive Science, HongChen, Korea
2017 Oct 13-15	<i>Lecture</i> (EEG in Cognitive Neuroscience) 2017 Autumn School for Cognitive Science The Korean Society for Cognitive Science, HongChen, Korea
2017 May	Session chair, The 31st Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea
2017	The director of the educational affairs, Korean Society for Cognitive Science
2017 Jan	Publication co-chair & Session chair, 5th IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea
2016 Feb	Registration chair, 4th IEEE International Winter Conference on Brain-Computer Interface, YongPyong, Korea
2015 July	The director of the general affairs, Korean Brain Education Society
2015 July	Session chair, The 7 th Symposium on Brain and Cognitive Engineering, Seoul, Korea
2015 May	Session chair, The 29th Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea
2015 Jan	Registration chair, 3 rd IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea
2015	Academic Editor for the journal 'Cognitive Science', Korean Society for Cognitive Science
2015	The director of the financial affairs, Korean Society for Cognitive Science
2014 Oct	Program committee, 2014 IEEE International Conference on Systems, Man, and Cybernetics, San Diego, CA, USA
2014 Oct	Session co-chair, 2014 IEEE International Conference on Systems, Man, and Cybernetics, San Diego, CA, USA
2014 Feb	Registration chair, 2 nd IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea

2012-2013	Mentoring students for <i>Creative Challenger Program</i> at Korea University
2013	The director of the general affairs, Korean Society for Cognitive Science
2013 Feb	Session chair, 1 st IEEE International Winter Workshop on Brain-Computer Interface, High1 Resort, Korea
2013 Feb	Publication chair, 1 st IEEE International Winter Workshop on Brain-Computer Interface, High1 Resort, Korea
2012 Nov	Local Arrangement co-chair, The 12 th China-Japan-Korea Joint Workshop on Neurobiology and Neuroinformatics, Seoul, Korea
2012 Oct	Publication co-chair, 2012 IEEE International Conference on Systems, Man, and Cybernetics, COEX, Seoul, Korea
2012 Aug	Organizing committee, Session chair, The 3 rd Neural Engineering workshop (Brain Engineering Society of Korea), Seoul, Korea
2012 June	Session chair, The 26 th Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea
2012 June-present	Expert-board, Center for Korean EEG data, Seoul, Korea
2012 Jan-present	Review-board of long-term strategy for the development of Science & Technology Korea Institute of Science & Technology Evaluation and Planning, Seoul, Korea
2012	A trustee member of the public relations, Korean Society for Cognitive Science
2012 Mar-2016 Oct	A trustee member of the international co-work, Brain Engineering Society of Korea
2010-2011	Mentoring students for <i>Senior Design Project</i> at Boston University (Department of Biomedical Engineering), Boston, USA
2008 Nov	Contribution of an essay to the official webzine of BK21 project for Medical Science, Yonsei University, Seoul, Korea
2008 Jan	Organization of 2007/2008 Winter workshop (Sogang University) of Korean Students Association of Cognitive Science
2002/2007	Founder and President of Korean Students Association of Cognitive Science
2000-2001	Contribution of Neuroscience essays to Korea Science Foundation official webzine

Classes

2018 1 st semester	<i>Lecture</i> (Class: Introduction to Brain wave)– graduate course Department of Brain and Cognitive Engineering <i>Korea University, Seoul, Korea</i>
2018 1 st semester	<i>Lecture</i> (Class: Debate on Science & Technology)– undergraduate course Interdisciplinary Major in Brain and Cognitive Sciences <i>Korea University, Seoul, Korea</i>
2017 2 nd semester	<i>Lecture</i> (Class: Brain wave Analysis)– graduate course Department of Brain and Cognitive Engineering <i>Korea University, Seoul, Korea</i>

- 2017 2nd semester *Lecture (Class: Introduction to Cognitive Brain Science)– graduate course*
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea
- 2017 1st semester *Lecture (Class: Introduction to Brain wave)– graduate course*
 Department of Brain and Cognitive Engineering
 Korea University, Seoul, Korea
- 2017 1st semester *Lecture (Class: Debate on Science & Technology)– undergraduate course*
 Interdisciplinary Major in Brain and Cognitive Sciences
 Korea University, Seoul, Korea
- 2016 2nd semester *Lecture (Class: Introduction to Brain-Computer Interfaces)– graduate course*
 Department of Brain and Cognitive Engineering
 Korea University, Seoul, Korea
- 2016 2nd semester *Lecture (Class: Debate on Science & Technology)– undergraduate course*
 Interdisciplinary Major in Brain and Cognitive Sciences
 Korea University, Seoul, Korea
- 2016 1st semester *Lecture (Class: Introduction to Brain wave)– graduate course*
 Department of Brain and Cognitive Engineering
 Korea University, Seoul, Korea
- 2016 1st semester *Lecture (Class: Debate on Science & Technology)– undergraduate course*
 Interdisciplinary Major in Brain and Cognitive Sciences
 Korea University, Seoul, Korea
- 2015 2nd semester *Lecture (Class: Introduction to Brain wave)– graduate course*
 Department of Brain and Cognitive Engineering
 Korea University, Seoul, Korea
- 2015 2nd semester *Lecture (Class: Debate on Science & Technology)– undergraduate course*
 Interdisciplinary Major in Brain and Cognitive Sciences
 Korea University, Seoul, Korea
- 2015 2nd semester *Lecture (Class: Brain wave Analysis)– graduate course*
 Department of Brain and Cognitive Engineering
 Korea University, Seoul, Korea
- 2015 1st semester *Lecture (Class: Introduction to Brain wave)– graduate course*
 Department of Brain and Cognitive Engineering
 Korea University, Seoul, Korea
- 2014 2nd semester *Lecture (Class: Introduction to Brain wave)– graduate course*
 Department of Brain and Cognitive Engineering
 Korea University, Seoul, Korea
- 2014 2nd semester *Lecture (Class: Introduction to Brain and Cognitive Science)– undergraduate*
course
 Interdisciplinary Major in Brain and Cognitive Sciences
 Korea University, Seoul, Korea
- 2014 1st semester *Lecture (Class: Introduction to Cognitive Brain Science)– graduate course*
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea
- 2014 1st semester *Lecture (Class: Topics in Cognitive Science)– graduate course*
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea

- 2013/2014 winter *Lecture* (Class: Artificial Intelligence)– undergraduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea
- 2013 2nd semester *Lecture* (Class: Introduction to Brain wave)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea
- 2013 2nd semester *Lecture* (Class: Introduction to Brain and Cognitive Science)– undergraduate course
Interdisciplinary Major in Brain and Cognitive Sciences
Korea University, Seoul, Korea
- 2013 1st semester *Lecture* (Class: Topics in Brain and Cognitive Engineering I)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea
- 2013 1st semester *Lecture* (Class: Introduction to Brain and Cognitive Science)– undergraduate course
Interdisciplinary Major in Brain and Cognitive Sciences
Korea University, Seoul, Korea
- 2012 2nd semester *Lecture* (Class: Introduction to Cognitive Brain Science)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea
- 2012 2nd semester *Lecture* (Class: Introduction to Brain and Cognitive Science)– undergraduate course
Interdisciplinary Major in Brain and Cognitive Sciences
Korea University, Seoul, Korea
- 2012 1st semester *Lecture* (Class: Neuroscience)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea
- 2012 1st semester *Lecture* (Class: Introduction to Brain and Cognitive Science)– undergraduate course
Interdisciplinary Major in Brain and Cognitive Sciences
Korea University, Seoul, Korea
- 2011 2nd semester *Lecture* (Class: Advanced Cognitive Science Seminar) – graduate course
Instructor, Department of Communication Science
Konkuk University, Seoul, Korea
- 2009 2nd semester *Lecture* (Class: Methodology of Cognitive Science)– graduate course (team teaching)
Instructor, Interdisciplinary Program in Cognitive Science
Seoul National University, Seoul, Korea
- 2008 2nd semester *Lecture* (Class: Cognitive Neuroscience Seminar) – graduate course
Instructor, Interdisciplinary Program in Cognitive Science
SungKyunKwan University, Seoul, Korea
- 2008 1st semester *Lecture* (Class: Brain, Mind & Behavior) – undergraduate course
Instructor, Department of Psychology
SungKyunKwan University, Seoul, Korea

[Academic Editor for the following Journals](#)

Medicine (ISSN: 0025-7974; from 2014)
 Cognitive Science (Korean domestic journal: from 2015 to 2016)

Review Activity for the following Journals & Research Funds

Scientific Reports
 NeuroImage
 PLOS ONE
 Journal of Ultrasound in Medicine
 Journal of Computing Science and Engineering
 BMC Neuroscience
 Ergonomics
 Physiology & Behavior
 Social Neuroscience
 Journal of Clinical Neurophysiology
 Journal of Psychosomatic Research
 IEEE Transactions on Cybernetics
 IEEE International Conference on Systems, Man, and Cybernetics
 IEEE Transactions on Information Forensics and Security
 IEEE Access
 IEEE International Winter Conference on Brain-Computer Interface
 Journal of Cognitive Science
 International Journal of Psychophysiology
 International Journal of Imaging Systems and Technology
 Swiss National Science Foundation
 Bulletin of the Polish Academy of Sciences: Technical Sciences
 Cognitive Science (Korean domestic journal)
 Science of Emotion and Sensibility (Korean domestic journal)
 Cognitive and Biological Psychology (Korean domestic journal)

Committee

IEEE Systems, Man, and Cybernetics Society
 Brain-Machine Interface Systems (Technical Committee)

Patent and Technical Royalty

1. Korean Patent (No. 10-2018-0082075: 'Method for selecting optimized EEG electrodes based on brain machine interfaces and recording medium for performing the method'; applied on July 16, 2018)
2. US patent application (No. 15/946,882: 'Prefrontal-based Cognitive Brain-Machine Interfacing Apparatus and Method Thereof'; applied on Apr. 6, 2018)
3. Korean Patent (No. 10-2018-0032121: 'Prefrontal based Cognitive Brain-Machine Interfacing Apparatus and Method'; applied on Mar. 20, 2018)
4. Korean Patent (No. 10-2018-0023103: 'Resonating Device and Method of Individual EEG Cognitive Frequency, Recording Medium for Performing the Method'; applied on Feb 26, 2018)
5. Korean Patent (No. 10-1811365: 'Apparatus and Method for Detecting Brain Fingerprint using Causal Connectivity of Brain Wave'; registered on Dec. 15, 2017)
6. US patent application (No. 15/677,589: 'Apparatus and Method for Detecting Brain Fingerprint using Causal Connectivity of Brain Wave'; applied on Aug. 15, 2017)

7. Korean Patent (No. 10-2017-0057479: 'Apparatus and Method for Context Recognizable Brain-Machine Interface'; applied on May 8, 2017)
8. Korean Patent (No. 10-2016-0105488: 'Apparatus and Method for Detecting Brain Fingerprint using Causal Connectivity of Brain Wave'; applied on Aug. 19, 2016)
9. Korean Patent (No. 10-1617005: 'Apparatus and Method for Brain-Brain Interface using Brainwave Magnetic Resonance and Transcranial Laser'; registered on Apr. 25, 2016)
10. US patent application (No. 14/884,972: 'EEG-based Brain-Machine Interface Apparatus and Method for Recognizing Human Intention using flickering visual stimulus'; applied on Oct. 16, 2015)
11. PCT patent application (No. PCT/KR14/884,972: 'EEG-based Brain-Machine Interface Apparatus and Method for Recognizing Human Intention using flickering visual stimulus'; applied on Oct. 16, 2015)
12. Korean Patent (No. 10-1470588: 'Apparatus and Method for Brain-Brain Interfacing'; registered on Dec. 2, 2014)
13. Korean Patent (No. 10-1469878: 'System and Method for Outputting Ultrasonic Energy to control Neural Function'; registered on Dec. 1, 2014)
14. Korean Patent (No. 10-1431203: 'Brain-Machine Interface Apparatus and Method for Recognizing Human Intention using Brain Wave'; registered on Aug. 11, 2014)
15. 2 domestic patents in process, 2 PCT international patents
16. LG Electronics Inc. : 2012 July – 2013 June
17. Lifetech Ltd. (technical royalty): 2012 Sep. - 2015 Aug. / 2015 June - 2018 May

Research Grant

1. Human Plus Convergence Research Grant (National Research Foundation of Korea): Non-invasive brain stimulation-EEG resonance-based study for a human-intelligence-augmenting system: 2018 Mar. –
2. Advanced Science Research Grant (National Research Foundation of Korea): Thalamic signal based study of consciousness: 2018 Mar. – 2021 Feb.
3. Basic Science Research Grant (National Research Foundation of Korea): 2012 Sep. - 2018 Aug.
4. Information Technology Research Grant (Institute for Information & communications Technology Promotion): 2017 Jan. – 2018 Dec.
5. Software Computing Source Technology Development Grant (Research for Brain-Computer Interfaces): 2017 Apr. – 2024 Mar.
6. Global Frontier Grant (National Research Foundation of Korea): 2012 Sep. - 2015 Aug.

Academic Affiliations

2012-present	Brain Engineering Society of Korea
2009-present	Korean Psychological Association
2007-present	Korean Society for Human Brain Mapping
2003-present	Association for the Scientific Study of Consciousness

2002-present	Korean Brain Society
2002-present	Society for Neuroscience
2001-present	Cognitive Neuroscience Society
2001-present	Korean Society for Cognitive Science
1996-present	American Association for the Advancement of Science

Honors, Scholarships and Fellowships

2018 July	2018 Albert Nelson Marquis Lifetime Achievement Award
Since 2013 Jun	Being listed for inclusion in 'Marquis <i>Who's Who</i> ' since the World 2014 (31 st Edition)
Since 2011 Feb	Being listed for inclusion in 'Marquis <i>Who's Who</i> ' since America 2012 (66 th Edition)
2010 Nov	Honored as Gerald J. Friedman Fellow, Friedman Diabetes Institute, Beth Israel Medical Center, New York, USA
2007 Nov	Award in oral presentation, The 9th Conference of <i>Korean Society for Human Brain Mapping</i>
2007 July	Magna-cum-laude Graduation (Magdeburg University, Germany)
2002 July	DAAD-KOSEF Scholarship (Summer Institute Program) DAAD (Deutscher Akademischer Austausch Dienst) and KOSEF (Korea Science and Engineering Foundation) Joint-Program
2000 Dec	Award at the Korea Digital Contents Contest, SoftExpo 2000 Ministry of Information and Communication, Korea
1993 Sep	Superior Scholarship (Seoul National University, Korea)

Invited talks

2015 July	The 7 th Symposium on Brain and Cognitive Engineering, Seoul, Korea
2015 Feb	The 7th Korea Brain Science Olympiad – Neural Engineering section
2014 June	The 6 th International Symposium on Brain and Cognitive Engineering, Tübingen, Germany
2014 Feb	The 6 th Korea Brain Science Olympiad – Neural Engineering section
2014 Jan	Software Convergence Symposium 2014 (SWCS 2014), Coex, Seoul, Korea
2013 Dec	Seoul National University, Korea Institute of Psychological Science (Prof. Sungryong Koh)
2013 May	A debate "On Science of Consciousness", The 27 th Annual Conference of <i>The Korean Society for Cognitive Science</i> , Seoul, Korea
2013 Feb	2013 IEEE International Winter Workshop on Brain-Computer Interface, High1 Resort, Korea
2013 Feb	The 5 th Korea Brain Science Olympiad – Neural Engineering section
2012 Dec	Psychiatric Grand Round, GangNam Severance Hospital, Department of Psychiatry, Seoul, Korea

2012 Nov	The 12 th China-Japan-Korea Joint Workshop on Neurobiology & Neuroinformatics, Seoul, Korea
2012 Nov	Humanities Based Convergence 2012 Seminar, Seoul, Korea
2012 Sep	ICP (Information and Communication Program), College of Information & Communications, Korea University, Seoul, Korea
2012 June	The 26 th Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea
2012 May	The 4 th International Symposium on Brain and Cognitive Engineering, Seoul, Korea
2012 Apr	Seoul National University, Korea Institute for Cognitive Science (Prof. Kyung-Min Lee)
2012 Mar	The 1 st meeting of the Korean Society of Brain Engineering, DaeJong, Korea
2012 Feb	National Research Foundation, DaeJong, Korea A periodic meeting of the Cognitive Convergence Engineering
2012 Feb	Chonnam National University, GwangJu, Korea Department of Psychology (Prof. Tae-Jin Park)
2012 Feb	SungKyunKwan University, Seoul, Korea Department of Interaction Science (Prof. Kwang-Soo Cho)
2012 Feb	Yonsei University, College of Medicine, Seoul, Korea Department of Psychiatry (Prof. Suk-Kyoon An)
2012 Feb	Hallym University College of Medicine, Chunchun, Korea Department of Physiology (Prof. Hyung-Cheul Shin)
2011 Dec	Korea University, Seoul, Korea Department of Psychology (Prof. Hyun-Taek Kim)
2011 Dec	Citizen forum for the evaluation of the effect of future science & technology Korea Institute of Science & Technology Evaluation and Planning, Seoul, Korea
2011 Dec	Yonsei University, College of Medicine, Seoul, Korea Department of Pharmacology (Prof. Dong-Goo Kim)
2011 Dec	The Annual conference of the Korean Society of Stress Medicine, Seoul, Korea (invited as a guest speaker)
2011 Nov	The Korean Society for Neuro-Humanities
2011 Nov	The 30 th Annual conference of Acoustical Society of Korea, DaeJong, Korea (invited as a guest speaker)
2011 Aug	Brain and Cognition Measurement Lab (Dr. Yong-Ho Lee) Korea Research Institute of Standards and Science, DaeJong, Korea

2011 Mar	Special Seminar, Martinos Center, Massachusetts General Hospital, Harvard Medical School, Boston, USA
2009 Sep	Korea Institute of Science and Technology, Seoul, Korea Center for Neural Science (Dr. Ji-Hyun Choi)
2009 Sep	SungKyunKwan University, Seoul, Korea Class: Language and Mind (Prof. Myung-Won Choi)
2009 July	Korea Computer Congress 2009, Jeju, Korea Intelligence-Language-Vision-Bio association workshop Korea Information Science Society
2009 June	Hankuk University of Foreign Studies, Seoul, Korea Linguistics and Cognitive Science (Prof. Jong Sup Chun)
2009 Apr	Korea University, Seoul, Korea Department of Psychology (Prof. Chai-Youn Kim) Cognitive Neuroscience Colloquium
2008 Dec	Hankuk University of Foreign Studies, Seoul, Korea Linguistics and Cognitive Science (Prof. Jong Sup Chun)
2008 Dec	Workshop #2: 'Oscillations in Human Electrophysiology' The 11th Annual Meeting of <i>The Korean Society for Brain and Neural Science</i> , Seoul, Korea
2008 Aug	Brain and Cognition Measurement Lab (Dr. Yong-Ho Lee) Korea Research Institute of Standards and Science, Daejeon, Korea
2008 May	National Institute of Scientific Investigation, Seoul, Korea
2008 May	Yonsei University, Seoul, Korea Graduate program in Cognitive Science (Prof. Sang Chul Chong)
2008 Apr	Yonsei University, Seoul, Korea Department of Communication Human Communication Lab. (Prof. Joochan Kim)
2008 Mar	Seoul National University, Korea Institute for Cognitive Science (Prof. Kyung-Min Lee)
2008 Jan	2007/2008 Winter workshop (Sogang University) of Korean Students Association of Cognitive Science
2007 Nov	Yonsei University, College of Medicine, Seoul, Korea Department of Pharmacology (Prof. Dong-Goo Kim)
2007 Oct	Ewha womans University, Korea Department of Life Science Behavior and Ecology Lab. (Prof. Jae-Chun Choi)
2007 Oct	Seoul National University Hospital, Korea MEG Center (Prof. Chun-Kee Chung)
2007 Sep	Seoul National University Hospital, Korea Clinical Cognitive Neuroscience Center (Prof. Jun-Soo Kwon)
2007 Sep	Yonsei University, College of Medicine, Seoul, Korea Research Institute of Radiological Science

	Molecular Neuroimaging Technology Lab. (Prof. Hae-Jung Park)
2002 Jun	Sogang University, Seoul, Korea Language Lab. (Prof. Sook-Hwan Cho)
1999 Apr	Korea Advanced Institute of Science & Technology, DaeJong, Korea Brain Lab. (Prof. Soo-Yong Kim)
1999 Apr	Seoul National University, Korea Institute for Molecular Biology and Genetics Molecular Neurobiology Lab. (Prof. Bong-Kiun Kaang)
1998 Jun	Northwestern Medical School, Chicago, IL, USA Melatonin Receptor Lab. (Prof. Margarita Dubocovich)
