

Curriculum Vitae

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Research Interest

1. Cognitive neuroscience (top-down process, consciousness / EEG, MEG, fMRI)
2. Non-invasive neuromodulation (transcranial current stimulation, focused ultrasound)
3. Cognitive prefrontal-based brain-machine interfaces

Publications

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

1. Seo JH, Lee JH, Min BK* 'Out-of-phase transcranial alternating current stimulation modulates the neurodynamics of inhibitory control' *NeuroImage*, 292, 120612, April 2024
2. Kim HK†, Min BK†, Lee UC, Sim JH, Noh GJ, Lee EK, Choi BM* 'Electroencephalographic features of elderly patients during anesthesia induction with remimazolam: a sub-study of a randomized controlled trial' *Anesthesiology*, <https://doi.org/10.1097/ALN.0000000000004904>, March 2024
3. Kim SE†, Shin CW†, Yim JY, Seo KW, Ryu HK, Choi HJ, Park JS*, Min BK* 'Resting-state electroencephalographic characteristics related to mild cognitive impairments' *Frontiers in Psychiatry*, Volume 14 - 2023 | <https://doi.org/10.3389/fpsy.2023.1231861>, September 2023
4. Hong ES†, Kim HS†, Hong SK, Pantazis D, Min BK* 'Deep learning-based electroencephalic diagnosis of tinnitus symptom' *Frontiers in Human Neuroscience*, 17:1126938. doi: 10.3389/fnhum.2023.1126938, April 2023
5. Seo JH†, Kim DJ†, Choi SH, Kim HK, Min BK*, 'The thalamocortical inhibitory network controls human conscious perception' *NeuroImage*, 264, 119748, December 2022
6. Kim SE†, Kim HS, Kwak YC, Ahn MH, Choi KM, Min BK†*, 'Neurodynamic correlates for the cross-frequency coupled transcranial alternating current stimulation during working memory performance' *Frontiers in Neuroscience*, 16:1013691. doi: 10.3389/fnins.2022.1013691, September 2022
7. Min BK*, Kim HS, Ko WJ, Ahn MH, Suk HI, Pantazis D, Knight R.T., 'Electrophysiological decoding of spatial and color processing in human prefrontal cortex' *NeuroImage*, 237, 118165, August 2021

8. Kim HS[†], Ahn MH[†], Min BK*, 'Deep-learning-based Automatic Selection of Fewest Channels for Brain-Machine Interfaces' *IEEE Transactions on Cybernetics*, February 2021; doi: 10.1109/TCYB.2021.3052813
9. Min BK*, Kim HS, Pinotsis D, Pantazis D, 'Thalamocortical inhibitory dynamics support conscious perception' *NeuroImage*, 220, 117066, June 2020
10. Min BK*, Hämäläinen M, Pantazis D, 'New Cognitive Neurotechnology Facilitates Studies of Cortical-Subcortical Interactions' *Trends in Biotechnology*, 38 (9), September 2020, pp. 952-962
11. Kim DJ, Min BK*, 'Rich-club in the Brain's Macrostructure: Insights from Graph theoretical analysis' *Computational and Structural Biotechnology Journal*, 18, June 2020, pp. 1761-1773
12. Kwak Y, Kong K, Song WJ, Min BK, Kim SE*, 'Multilevel Feature Fusion with 3D Convolutional Neural Network for EEG based Workload Estimation' *IEEE Access*, 8, Jan 2020, pp. 16009-16021
13. 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
14. 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
15. Min BK*, Ricardo CL, Millán JdR, 'Harnessing prefrontal cognitive signals for brain-machine interfaces' *Trends in Biotechnology*, 35 (7), July 2017, pp. 585-597
16. 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
17. 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
18. 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
19. 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
20. Kim HS, Min BK, Park DH, Hawi S, Kim BJ, Czosnyka Z, Czosnyka M, Sutcliffe M, Kim DJ, 'Poro-hyperelastic Anatomical models for hydrocephalus and idiopathic intracranial hypertension' *Journal of Neurosurgery*, 122 (6), June 2015, pp. 1330-1340
21. Min BK*, Müller KR, 'Electroencephalography/sonication-mediated human brain-brain interfacing technology' *Trends in Biotechnology*, 32 (7), July 2014, pp. 345-346
22. 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
23. 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
24. 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
25. 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
26. 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,

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32. 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
33. Min BK, Park HJ, 'Task-related modulation of anterior theta and posterior alpha EEG reflects top-down preparation' *BMC Neuroscience*, 2010, 11: 79
34. Min BK, 'A thalamic reticular networking model of consciousness' *Theoretical Biology & Medical Modelling*, 2010, 7: 10
35. Min BK, 'Spectral analysis of brain oscillatory activity' *Korean Journal of Cognitive Science*, 20 (2), June 2009, pp. 155-181
36. 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
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38. Min BK, Herrmann CS, 'Prestimulus EEG alpha activity reflects prestimulus top-down processing' *Neuroscience Letters*, 422 (2), July 2007, pp. 131-135
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Book chapter and Booklet

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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, Schicktzan S (ed.), "*Bewusstsein (Consciousness)*", pp. 120-134, Utb. Germany (ISBN 3-8252-2686-7)
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Abstracts and Conference proceedings (*corresponding author)

1. Seo JH, Min BK*, 'Resting-state functional connectivity is modulated by phase-dependent transcranial alternating current stimulation' The 53rd Annual Meeting of Society for Neuroscience, Chicago, USA, October 2024 (submitted)
2. Lee KH, Park TY, Min BK, Kim HM*, 'Real-time simulation of phased multi-element transducers using AI' The 23rd Annual International Symposium on Therapeutic Ultrasound, Taipei, Taiwan, September 2024 (submitted)
3. Min BK*, 'Network-wise transcranial alternating current stimulation with phase lags' Dynamics of Cognition, COGSCI 2024, The Annual Meeting of the Cognitive Science Society, Rotterdam, the Netherlands, July 2024
4. Yoon SB, Lee JH, Yang JW, Seo JH, Min BK*, 'Fronto-occipital EEG phase synchronization during inhibitory control' The 38th Annual Conference of the Korean Society for Cognitive Science, Seoul, Korea, May 2024; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2024
5. Kim DE, Kim S, Min BK, Im M*, 'Retinal Degeneration Increases Variabilities of Light-Evoked Spiking Activities in Ganglion Cells Depending on Stimulus Contrast' The 46th International Conference of the IEEE Engineering in Medicine and Biology Society, Orlando, USA, July 2024
6. Yun SB, Lee JH, Kim YK, Park JC, Kwon JW, Yang JW, Seo JH, Min BK*, 'Phase-prediction of EEG alpha activity using an artificial neural network' The Annual Meeting of Korean Society for Cognitive & Biological Psychology, Seoul National University, Seoul, Korea, February 2024
7. Kim YK, Lee JH, Park JC, Kwon JW, Yun SB, Yang JW, Seo JH, Min BK*, 'Out-of-phase transcranial alternating current stimulation modulates prestimulus EEG theta and alpha power' The 31st Annual Meeting of Cognitive Neuroscience Society, Toronto, Canada, April 2024
8. Seo JH, Lee JH, Kim YK, Park JC, Kwon JW, Min BK*, 'Non-invasive Electrical Brain Stimulation with a Phase lag: a fMRI Study' The 30th Annual Meeting of the Organization for Human Brain Mapping (OHBM) 2024, Seoul, Korea, June 2024
9. Kim YK, Lee JH, Park JC, Kwon JW, Yun SB, Yang JW, Seo JH, Min BK*, 'Enhanced inhibitory control after out-of-phase theta tACS between the IDLPFC and dACC' The 12th IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea, February 2024
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12. Kim YK, Kwon JW, Lee JH, Park JC, Yun SB, Seo JH, Min BK*, 'Out-of-phase transcranial alternating current stimulation between dorsolateral prefrontal and anterior cingulate cortices alters P300 amplitudes during inhibitory-control performance' The 13th International Conference on Cognitive Science, Seoul, Korea, August 2023
13. Kwon JW, Park JC, Kim YK, Lee JH, Yoon SB, Seo JH, Min BK*, 'Frontal and occipital tACS-mediated neuromodulation of visual perception' The 37th Annual Conference of the Korean Society for Cognitive Science, Seoul, Korea, May 2023; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2023
14. Park JC, Kwon JW, Lee JH, Kim YK, Yoon SB, Seo JH, Min BK*, 'tACS-mediated neuromodulation of perceptual decision' The 37th Annual Conference of the Korean Society for Cognitive Science, Seoul, Korea, May 2023; Printed in 'Proceedings of the Korean Society for Cognitive Science Conference', May 2023
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16. Min BK*, Hong ES, Kim HS, Hong SK, Pantazis D, 'Deep learning-based diagnosis of tinnitus using EEG signals' The 10th International BCI Meeting, Brussels, Belgium, June 2023
17. Kim HK, Kwon JW, Park JC, Kim YK, Lee JH, Seo JH, Min BK*, 'Improved perception performance via transcranial alternating current stimulation to the superior parietal and occipital regions' The Annual Meeting of Association for Psychological Science, Washington DC, USA, May 2023
18. Kim HK, Sim JH, Noh GJ, Min BK*, Choi BM*, 'Electroencephalogram characteristics during induction of anesthesia with remimazolam in elderly patients' The annual conference of the Korean Society for Anesthetic Pharmacology, Seoul Trade Exhibition & Convention Hall, Korea, April 2023
19. Kim YK, Kwon JW, Lee JH, Park JC, Kim HK, Seo JH, Min BK*, 'Improved inhibitory-control performance by out-of-phase transcranial alternating current stimulation' The 30th Annual Meeting of Cognitive Neuroscience Society, San Francisco, USA, March 2023
20. Kwon JW, Kim YK, Park JC, Lee JH, Kim HK, Seo JH, Min BK*, 'Decoding the phase-lag type of brain stimulation using EEG signals' *Brain Stimulation*, 16 (1), p. 234, <https://doi.org/10.1016/j.brs.2023.01.353> The 5th international Brain Stimulation Conference, Lisbon, Portugal, February 2023
21. Lee JH, Kim HK, Kim YK, Park JC, Kwon JW, Seo JH, Min BK*, 'Occipital EEG upper-alpha power enhancement using cross-frequency coupled transcranial alternating current stimulation with a 45-degree phase lag' The Annual Meeting of Korean Society for Cognitive & Biological Psychology, Yonsei University, Seoul, Korea, February 2023
22. Kwon JW, Kim HK, Lee JH, Park JC, Kim YK, Seo JH, Min BK*, 'Frontal EEG upper-alpha power enhancement during working-memory performance using transcranial alternating current stimulation with a 180-degree phase lag' The Annual Meeting of Korean Society for Human Brain Mapping, The K-Hotel, Seoul, Korea, November 2022
23. Park JC, Hong ES, Kim YK, Kwon JW, Seo JH, Kim HK, Min BK*, 'Improved working-memory performance by cross-frequency coupled transcranial alternating current stimulation to central-

- executive and default-mode networks with a phase lag' The 51st Annual Meeting of Society for Neuroscience, San Diego, USA, November 2022
24. Seo JH, Kim DJ, Choi SH, Min BK*, 'Thalamocortical causal communications in conscious perception' The 25th Annual Meeting of Association for the Scientific Study of Consciousness, Amsterdam, The Netherlands, July 2022
 25. Kim HS, Ahn MH, Min BK*, 'Fronto-occipital EEG alpha reduction by transcranial alternating current stimulation during working memory performance' The 29th Annual Meeting of Cognitive Neuroscience Society, San Francisco, USA, April 2022
 26. Ahn MH, Kim HS, Min BK*, 'Fronto-occipital phase shift in EEG cross-frequency coupled phase-dependency during working memory performance' The 50th Annual Meeting of Society for Neuroscience, Chicago, USA, November 2021
 27. Hong ES, Hong KH, Min BK*, 'Prefrontal EEG-based decoding of expectancy' The 2nd Korea Artificial Intelligence Conference, Jeju, Korea, September 2021
 28. Kwak YC, Song WJ, Min BK, Kim SE*, 'Classification of working memory performance with 3D convolutional neural network from EEG signals' The Annual Conference of the Korean Institute of Communications and Information Sciences, YongPyong, Korea, February 2020
 29. Kim JW, Kim HS, Min BK*, 'Cross-frequency coupled entrainment of EEG activity by transcranial alternating current stimulation' The 27th Annual Meeting of Cognitive Neuroscience Society, Boston, USA, March 2020
 30. Kwak YC, Song WJ, Min BK, Kim SE*, '3D CNN based multilevel feature fusion for workload estimation' The 8th IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea, February 2020
 31. Min BK*, Kim JW, Pantazis D, Kim HS, 'Decoding prestimulus EEG alpha activity reveals expectancy in the direction of stimulus changes' The 49th Annual Meeting of *Society for Neuroscience*, Chicago, USA, October 2019
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43. 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
44. Ahn MH, Min BK*, 'Brain-machine interfacing sensors using brainwave magnetic resonance' IEEE Sensors 2017, Glasgow, Scotland, UK, Oct.29-Nov.1, 2017
45. Ahn MH, Min BK*, 'SSVEP-based individual authentication' The 2nd Neural Engineering summer workshop (Brain Engineering Society of Korea), Busan, Korea, July 2017
46. 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
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48. 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
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50. Min BK*, 'Top-down brain-machine interfacing technology' The 7th International Symposium on Brain and Cognitive Engineering, Seoul, Korea, July 2015
51. 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
52. 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
53. Min BK*, 'EEG/sonication-mediated human brain-brain interfacing technology' The 6th International Symposium on Brain and Cognitive Engineering, Tübingen, Germany, June 2014
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55. 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

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58. 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
59. 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
60. 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
61. 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
62. 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
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65. 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
66. 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
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68. 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
69. 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
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71. 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

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73. 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
74. Min BK*, 'Brain-Brain Interface' The 4th International Symposium on Brain and Cognitive Engineering, Seoul, Korea, May 2012
75. 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
76. 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
77. 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
78. 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
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80. 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)
81. 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
82. 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
83. 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
84. 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
85. 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

86. 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
87. 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
88. 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)
89. 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
90. 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
91. 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)
92. 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
93. 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)
94. 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*
95. 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
96. 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
97. 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 Natural Sciences (magna cum laude)
(Advisor: Prof. Dr. Christoph Herrmann)

	Department of Biological Psychology Magdeburg University, 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

2023 Jan-2024 Dec	President, Korean Society for Cognitive Science
2023 Feb-2024 June	President, International Association for Cognitive Science (IACS)
2023 Apr-Present	Member of the 10 th Faculty Council of Korea University
2024 Mar-2026 Feb	Director, Institute of Computer-Information & Communication Korea University, Seoul, Korea
2022 Sep-2024 Aug	Director, Institute of Brain and Cognitive Engineering Korea University, Seoul, Korea
2020 Aug-2022 July	Head, Interdisciplinary Major in Brain & Cognitive Sciences Korea University, Seoul, Korea
2020 Mar-2022 Feb	Adjunct Professor Department of Artificial Intelligence Korea University, Seoul, Korea
2021 Sep-Present	Full Professor / Tenured Department of Brain and Cognitive Engineering Korea University, Seoul, Korea
2017 Sep-2021 Aug	Associate Professor Department of Brain and Cognitive Engineering Korea University, Seoul, Korea
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

2024 May	Organizing committee, The 37 th Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea
2023 Aug	Organizing committee, The 13 th International Conference on Cognitive Science, Seoul, Korea
2023 May	Organizing committee, The 36 th Annual Conference of The Korean Society for Cognitive Science, Seoul, Korea
2022 Aug-	Associate editor (in Brain Imaging Methods), <i>Frontiers in Human Neuroscience</i> (Electronic ISSN 1662-5161), <i>Frontiers in Neuroimaging</i> (Electronic ISSN 2813-1193), <i>Frontiers in Neurology</i> (Electronic ISSN 1664-2295)
2022 Mar-	Advisory board member for the electroceutical therapies & digital therapeutics, Korea Brain Research Institute, Ministry of Science & ICT
2022 May-	The Korea national coordinator of the International Brain Bee (IBB) World Championship
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, 6 th 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 31 st 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, 5 th IEEE International Winter Conference on Brain-Computer Interface, High1 Resort, Korea
2016 Feb	Registration chair, 4 th 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 29 th 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

2024 1 st semester	<i>Lecture (Class: Introduction to Cognitive Brain Science)– graduate course Department of Brain and Cognitive Engineering Korea University, Seoul, Korea</i>
	<i>Lecture (Class: Special Research in Brain & Cognitive Engineering 1)– graduate course Department of Brain and Cognitive Engineering Korea University, Seoul, Korea</i>
2023 2 nd semester	<i>Lecture (Class: Topics in Cognitive Science)– graduate course Department of Brain and Cognitive Engineering Korea University, Seoul, Korea</i>
	<i>Lecture (Class: Brain wave Analysis)– graduate course Department of Brain and Cognitive Engineering Korea University, Seoul, Korea</i>
2023 1 st semester	<i>Lecture (Class: Topics in Brain & Cognitive Engineering II)– graduate course Department of Brain and Cognitive Engineering</i>

Korea University, Seoul, Korea

*Lecture (Class: Research Internship)– undergraduate course
Interdisciplinary Major in Brain and Cognitive Sciences,
Korea University, Seoul, Korea*

2022 2nd semester *Lecture (Class: Topics in Consciousness)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

*Lecture (Class: Behavioral Methods in Cognitive Science)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

2022 1st semester *Lecture (Class: Introduction to Brain wave)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

*Lecture (Class: Brain wave Analysis)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

2021 2nd semester *Lecture (Class: Topics in Brain & Cognitive Engineering II)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

*Lecture (Class: Behavioral Methods in Cognitive Science)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

2021 1st semester *Lecture (Class: Introduction to Brain wave)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

*Lecture (Class: Brain wave Analysis)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

2020 2nd semester *Lecture (Class: Introduction to Brain wave)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

2020 1st semester *Lecture (Class: Brain wave Analysis)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

*Lecture (Class: Introduction to Brain wave)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

2019 2nd semester *Lecture (Class: Brain wave Analysis)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

*Lecture (Class: Introduction to Brain wave)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

2018 1st semester *Lecture (Class: Introduction to Brain wave)– graduate course
Department of Brain and Cognitive Engineering*

Korea University, Seoul, Korea

*Lecture (Class: Debate on Science & Technology)– undergraduate course
Core General Education, Korea University, Seoul, Korea*

2017 2nd semester *Lecture (Class: Brain wave Analysis)– graduate course
Department of Brain and Cognitive Engineering
Korea University, Seoul, Korea*

*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*

*Lecture (Class: Debate on Science & Technology)– undergraduate course
Core General Education, 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*

*Lecture (Class: Debate on Science & Technology)– undergraduate course
Core General Education, 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*

*Lecture (Class: Debate on Science & Technology)– undergraduate course
Core General Education, 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*

*Lecture (Class: Debate on Science & Technology)– undergraduate course
Core General Education, Korea University, Seoul, Korea*

*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*

*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

*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*

*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*

*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*

*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*

*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

BMC Neuroscience (ISSN: 1471-2202; Editor)
 Frontiers in Human Neuroscience (ISSN: 1662-5161; Associate Editor)
 Frontiers in Neuroimaging (ISSN: 2813-1193, Associate Editor)
 Frontiers in Neurology (ISSN: 1664-2295, Associate Editor)
 Frontiers in Neurorobotics (ISSN: 1662-5218; since 2020)
 Medicine (ISSN: 0025-7974; since 2014)
 Cognitive Science (Korean domestic journal: from 2015 to 2016)

Review Activity for the following Journals & Research Funds

Trends in Biotechnology (Cell Press)
 Communications Biology (Nature Press)
 Scientific Reports (Nature Press)
 NeuroImage
 PLOS ONE
 Heliyon (Cell Press)
 Frontiers in Neuroscience
 Frontiers in Psychiatry
 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. 10-2533054: 'Apparatus for Diagnosis and Prediction of Tinnitus based on Electroencephalography, Method for Processing Electroencephalography signal and Computer program for the same'; registered on May 11, 2023)

2. Korean Patent (No. 10-2510646: 'Biological-clock and sleep-cycle function control device through non-invasive brain stimulation, control method using the same, and a computer-readable storage medium'; applied on March 13, 2023)
3. Korean Patent (No. 10-2023-0032744: 'Apparatus, Method and Recording Medium for Controlling Cognitive Processing Speed through Non-invasive Brain Stimulation'; applied on March 13, 2023)
4. Korean Patent (No. 10-2023-0000531: 'Device and Method of Phase-lagged non-invasive Neurostimulation-based Augmentation of Cognitive Functions using the anticorrelated relation between task-relevant brain networks, Recording Medium for Performing the Method'; applied on November 21, 2022)
5. Korean Patent (No. 10-2403540: 'Apparatus and method for neuromodulation to improve the tinnitus symptom and its related cognitive impairment'; registered on May 25, 2022: Hong SK, Ahn MH, Min BK, Yoo JH)
6. US patent application (No. US 17/707,193: 'Apparatus for controlling Biological Clock and Sleep cycle through non-invasive brain stimulation, control method using the same, and computer-readable storage medium having computer program recorded thereon for providing the same'; applied on March 29, 2022)
7. US patent registration (No. US 11,241,185: 'Resonating Device and Method of Individual EEG Cognitive Frequency, Recording Medium for Performing the Method'; registered on Feb. 08, 2022)
8. Korean Patent (No. 10-2021-0053454: 'Non-invasive scalp-electrode-based electrical brain-stimulatory spatial-resolution augmenting device and method, and a computer-readable storage medium'; applied on April 26, 2021)
9. Korean Patent (No. 10-2021-0053007: 'Apparatus for Diagnosis and Prediction of Tinnitus based on Electroencephalography, Method for Processing Electroencephalography signal and Computer program for the same'; applied on April 23, 2021)
10. Korean Patent (No. 10-2021-0044449: 'Biological-clock and sleep-cycle function control device through non-invasive brain stimulation, control method using the same, and a computer-readable storage medium'; applied on April 6, 2021)
11. US patent registration (No. US 10,890,972: 'Prefrontal-based Cognitive Brain-Machine Interfacing Apparatus and Method Thereof'; registered on Jan. 12, 2021)
12. Korean Patent (No. 10-2020-0122516: 'Apparatus and Method for Neuromodulation for Tinnitus Remedy and Improvement of Tinnitus-related Cognitive Impairment'; applied on Sep 22, 2020)
13. Korean Patent (No. 10-2124430: 'Method for selecting optimized EEG electrodes based on brain machine interfaces and recording medium for performing the method'; registered on June 12, 2020)
14. Korean Patent (No. 10-2113547: 'Device and Method of EEG Individual Cognitive Frequency Resonance-based Augmentation of Cognitive Functions, Recording Medium for Performing the Method'; registered on May 15, 2020)
15. US patent registration (No. US 10,635,899: 'Apparatus and Method for Detecting Brain Fingerprint using Causal Connectivity of Brain Wave'; registered on 28 Apr. 2020)
16. US patent registration (No. US 10,524,683: 'EEG-based Brain-Machine Interface Apparatus and Method for Recognizing Human Intention using flickering visual stimulus'; registered on Jan. 7, 2020)
17. Korean Patent (No. 10-2031958: 'Prefrontal based Cognitive Brain-Machine Interfacing Apparatus and Method'; registered on Oct. 7, 2019)

18. US patent application (No. US 16/286,220: 'Resonating Device and Method of Individual EEG Cognitive Frequency, Recording Medium for Performing the Method'; applied on Feb. 26, 2019)
19. Korean Patent (No. 10-1949079: 'Resonating Device and Method of Individual EEG Cognitive Frequency, Recording Medium for Performing the Method'; registered on Feb. 11, 2019)
20. Korean Patent (No. 10-2019-0008327: 'Device and Method of EEG Individual Cognitive Frequency Resonance-based Augmentation of Cognitive Functions, Recording Medium for Performing the Method'; applied on Jan. 22, 2019)
21. Korean Patent (No. 10-1939369: 'Apparatus and Method for Context Recognizable Brain-Machine Interface'; registered on January 10, 2019)
22. 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)
23. US patent application (No. US 15/946,882: 'Prefrontal-based Cognitive Brain-Machine Interfacing Apparatus and Method Thereof'; applied on Apr. 6, 2018)
24. Korean Patent (No. 10-2018-0032121: 'Prefrontal based Cognitive Brain-Machine Interfacing Apparatus and Method'; applied on Mar. 20, 2018)
25. 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)
26. Korean Patent (No. 10-1811365: 'Apparatus and Method for Detecting Brain Fingerprint using Causal Connectivity of Brain Wave'; registered on Dec. 15, 2017)
27. US patent application (No. US 15/677,589: 'Apparatus and Method for Detecting Brain Fingerprint using Causal Connectivity of Brain Wave'; applied on Aug. 15, 2017)
28. Korean Patent (No. 10-2017-0057479: 'Apparatus and Method for Context Recognizable Brain-Machine Interface'; applied on May 8, 2017)
29. Korean Patent (No. 10-2016-0105488: 'Apparatus and Method for Detecting Brain Fingerprint using Causal Connectivity of Brain Wave'; applied on Aug. 19, 2016)
30. Korean Patent (No. 10-1617005: 'Apparatus and Method for Brain-Brain Interface using Brainwave Magnetic Resonance and Transcranial Laser'; registered on Apr. 25, 2016)
31. US patent application (No. US 14/884,972: 'EEG-based Brain-Machine Interface Apparatus and Method for Recognizing Human Intention using flickering visual stimulus'; applied on Oct. 16, 2015)
32. 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)
33. Korean Patent (No. 10-1470588: 'Apparatus and Method for Brain-Brain Interfacing'; registered on Dec. 2, 2014)
34. Korean Patent (No. 10-1469878: 'System and Method for Outputting Ultrasonic Energy to control Neural Function'; registered on Dec. 1, 2014)
35. Korean Patent (No. 10-1431203: 'Brain-Machine Interface Apparatus and Method for Recognizing Human Intention using Brain Wave'; registered on Aug. 11, 2014)

36. 2 domestic patents in process, 2 PCT international patents
37. LG Electronics Inc. : 2012 July – 2013 June
38. 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 Apr. – 2018 Nov. / 2020. Apr. – 2024 Dec.
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. – 2019 Dec.
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

2024 August “Thalamocortical neurodynamics in human conscious perception“, Hong Kong University of Science & Technology, Hong Kong

2024 April “Thalamocortical inhibitory dynamics support conscious perception“, Cutting-edge Biomedical Research, Ajou University Hospital, Suwon, Korea

2024 March “Fundamentals of EEG and non-invasive neuromodulation“, Brain-based Learning Research Center, Seoul National University, Seoul, Korea

2023 August “Neurodynamics-based Neuromodulation” Brain and Artificial Intelligence Workshop, Korea Brain Education Society, Gyeongnam, Korea

2023 April Special Lecture, The 10th annual meeting of Korean Society of Intraoperative Neurophysiological monitoring, Auditorium, St. Mary Hospital, Seoul, Korea

2023 March “Funny story of the Brain” 2023 Brain Awareness Week (hosted by the Korean Society for Cognitive Science), Hana square Auditorium, Korea University

2023 March “From the Brain & To the Brain” 2023 Monthly Seminar for students of the Korean Society for Cognitive Science, Science Library, Korea University

2023 March “Carrier Panel” 2023 Seminar @ Institute of Brain & Cognitive Engineering, Korea University

2022 Sep “Brain-machine interfaces: present and future perspectives” The 27th annual conference of Korean Society of Stereotactic and Functional Neurosurgery, Grand Hyatt, Incheon, Korea

2022 May “Cognitive Neuromodulation” Korea Brain Research Institute, Daegu, Korea

2022 May “EEG and Brain Stimulation” National Science Foundation of Korea

2021 Oct “Neuromodulation” Samsung Research

2020 Dec “Thalamus and Conscious Perception” The 7th annual meeting of Korea Society for EEG and Neurophysiology

2020 Nov Asia Community Lectures “Human Brain Interfaces”, St. Mary’s University, USA

2019 Oct Sound Design Research Lab, Hyundai Motor Company, Gyeonggi-do, Korea

2015 July The 7th Symposium on Brain and Cognitive Engineering, Seoul, Korea

2015 Feb The 7th Korea Brain Science Olympiad – Neural Engineering section

2014 June The 6th International Symposium on Brain and Cognitive Engineering, Tübingen, Germany

2014 Feb The 6th 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 30th Annual conference of Acoustical Society of Korea, Daejeon, Korea
(invited as a guest speaker)
- 2011 Aug Brain and Cognition Measurement Lab (Dr. Yong-Ho Lee)
Korea Research Institute of Standards and Science, Daejeon, 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 *The Korean Society for Brain and Neural Science*,
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. Joohan 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, DaeJon, 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)
