Masaki Nakanishi, Ph.D

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Institute for Neural Computation,
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Professional experience

2021/7 -	:	Swartz Center for Computational Neuroscience, University of California San Diego Assistant Research Scientist
2019/7 - 2021/6	:	Swartz Center for Computational Neuroscience, University of California San Diego Assistant Project Scientist
2017/5 - 2019/6	:	Swartz Center for Computational Neuroscience, University of California San Diego Postdoctoral Scholar
2015/5 - 2017/5	:	Hamilton Glaucoma Center, University of California San Diego Postdoctoral Scholar Department of Electrical and Electronic Engineering
2015/9	:	Tokyo University of Agriculture and Technology Visiting Scholar
2014/7 - 2015/5	:	Swartz Center for Computational Neuroscience, University of California San Diego Visiting Scholar

Education

2011/4 - 2014/9	:	Graduate School of Science and Technology, Keio University Ph.D in Engineering (2014/9)
2011/11 - 2012/3	:	Swartz Center for Computational Neuroscience, University of California San Diego Visiting Graduate Student
2010/10 - 2011/3	:	Graduate School of Information and Communication Engineering Tokyo University of Agriculture and Technology Ph.D program (Withdrawal)
2009/4 - 2010/9	:	Graduate School of Information and Communication Engineering Tokyo University of Agriculture and Technology Master of Engineering (2010/9)
2005/4 - 2009/3	:	Department of Information and Communication Engineering Tokyo University of Agriculture and Technology Bachelor of Engineering (2009/3)

Honors and Awards

2022 : EMBS Best Paper Award: Transactions on Biomedical Engineering (1st place), IEEE
2019 : Outstanding reviewer awards 2019, Journal of Neural Engineering, IOP Publishing
2018 : Poster presentation award, IEM 10th Anniversary Symposium, University of California San Diego
2017 : Outstanding reviewer awards 2017, Journal of Neural Engineering, IOP Publishing
2014 : Research fellowship (PD), Japan Society for Promotion of Science
2013 : Research fellowship (DC2), Japan Society for Promotion of Science
2011 : Research fellowship, Global Center of Excellence in Keio University
2011 : NCSP'11 student paper award, The 2011 RISP International Workshop on NCSP
2010 : IEEJ excellent presentation award, IEEJ Industry Applications Society

Professional Membership

Senior Member : Institute of Electrical and Electronics Engineers (IEEE), 2020 - present
Member : Brain-Computer Interface (BCI) Society, 2016 - present
Member : Society for Neuroscience (SfN), 2016 - 2017
Member : Association for Research in Vision and Ophthalmology (ARVO), 2016 - 2017
Member : Organization for Human Brain Mapping (OHBM), 2015 -2016

Scholar indices

Total citations : 2633
h-index : 20
(Update: Feb-22-2023)

Publications

Journal Articles

1. M.Nakanishi, M. Miyakoshi, "Revisiting polarity indeterminancy of ICA-decomposed ERPs and scalp topographies" *Brain Topogr.* Accepted.
2. M.Nakanishi, A. Miner, T. -P. Jung, J. S. Graves, "Novel Moving Steady-State Visual Evoked Potential Stimulus to Assess Afferent and Efferent Dysfunction in Multiple Sclerosis" *IEEE Trans. Neural Syst. Rehabil. Eng.*, vol. 31, pp.1297-1301, 2023.
3. C. -M. Wong, Z. Wang, M.Nakanishi, A. Rosa, T. -P. Jung, F. Wan, "Online adaptation boosts SSVEP-based BCI performance", *IEEE Trans. Biomed. Eng.*, vol.69, no.6, pp.2018-2028, 2022..
4. M.Nakanishi, Y. Tanji, T. Tanaka, "Waveform-coded steady-state visual evoked potentials for brain-computer interfaces", *IEEE Access*, vol.9, pp.144768-144775, 2021.
5. D. Koshiyama, M. Miyakoshi, Y. B. Joshi, M.Nakanishi, K. Tanaka-Koshiyama, J. Sprock, G. A. Light, "Source decomposition of the frontocentral auditory steady-state gamma band response in schizophrenia patients and healthy subjects", *Psychiatry Clin. Neurosci.*, vol.75, no.5, pp.172-179, 2021.

6. D. Koshiyama, M. Miyakoshi, Y. B. Joshi, M.Nakanishi, K. Tanaka-Koshiyama, J. Sprock, G. A. Light, "Sources of the frontocentral mismatch negativity and p3a responses in Schizophrenia patients and healthy comparison subjects", *Int. J. Psychophysiol.*, vol.161, pp.76-85, 2021.

7. K. -J. Chiang, C. -S. Wei, M.Nakanishi, T. -P. Jung, "Boosting template-based SSVEP decoding by cross-domain transfer learning," *J. Neural Eng.*, vol.18, no.1, 016002, 2021.

8. M.Nakanishi, Y. -T. Wang, C. -S. Wei, K. -J. Chaing, and T. P. Jung, "Facilitating calibration in high-speed BCI spellers via leveraging cross-device shared latent responses", *IEEE Trans. Biomed. Eng.*, vol.67, no.4, pp.1105-1113, 2020. (Impact Factor: 4.491)

9. S. Kanoga, M.Nakanishi, A. Murai, M. Tada, and A. Kanemura, "Robustness analysis of decoding SSVEPs in human with head movements using a moving visual flicker", *J. Neural Eng.*, vol.17, 016009, 2020. (Impact Factor: 4.551)

10. M.Nakanishi, Y. Wang, X. Chen, Y. -T. Wang, X. Gao, and T. P. Jung, "Enhancing detection of SSVEPs for a high-speed brain speller using task-related component analysis", *IEEE Trans. Biomed. Eng.*, vol.65, no.1, pp.104-112, 2018. (Impact Factor: 4.491)

11. M.Nakanishi, Y. -T. Wang, T. -P. Jung, J. K. Zao, Y. -Y. Chien, A. Diniz-Filho, F. B. Daga, Y. P. Lin, Y. Wang, F. A. Medeiros, "Detecting glaucoma with a portable brain-computer interface for objective assessment of visual function loss", *JAMA Ophthalmol.*, 2017. (Impact Factor: 6.167)

12. Y. -T. Wang*, M.Nakanishi*, C. -S. Wei, Y. Wang, C. K. Cheng and T. -P. Jung, "An online brain-computer interface based on SSVEPs measured from non-hair-bearing areas", *IEEE Trans. Neural Syste. Rehabil. Eng.*, vol.25, no.1, pp.11-18, 2017. (*Equal contribution; Impact Factor: 3.478)

13. M. R. Islam, M. K. I. Molla, M.Nakanishi, T. Tanaka, "Unsupervised frequency-recognition method of SSVEPs using a filter bank implementation of binary subband CCA", *J. Neural Eng.*, vol.14, 026007, 2017. (Impact Factor: 4.551)

14. M. Xu, Y. Wang, M.Nakanishi, Y. -T. Wang, H. Qi, T. -P. Jung, D. Ming, "Fast detection of covert visuospatial attention using hybrid N2pc and SSVEP features", *J Neural Eng.*, vol. 13, no. 6, 066003, 2016. (Impact Factor: 4.551)

15. S. Kanoga, M.Nakanishi, Y. Mitsukura, "Assessing the effects of voluntary and involuntary eyeblinks in independent compoenents of electroencephalogram", *Neurocomp.*, vol.193, pp.20-32, 2016. (Impact Factor: 4.072)

16. A. Diniz-Filho, E. R. Boer. A. Elhosseiny, Z. Wu, M.Nakanishi, F. A. Medeiros, "Glaucoma and driving risk under fog conditions", *Transl. Vis. Sci. Technol.*, vol.5, no.6, 15, 2016 (Impact factor: 2.399).

17. M.Nakanishi, Y. Wang, Y. -T. Wang, and T. -P. Jung, "A comparison study of canonical correlation analysis based methods for detecting steady-state visual evoked potentials", *PLoS One*, vol.10, no.10, e140703, 2015. (Impact Factor: 2.776)

18. X. Chen, Y. Wang, M.Nakanishi, X. Gao, T. -P. Jung and S. Gao, "High-speed spelling with a noninvasive brain-computer interface", *Proc. Natl. Acad. Sci. U. S. A.*, vol.112, no.44, E6058-6067, 2015. (Impact Factor: 9.580)

19. M.Nakanishi, Y. Wang, Y. -T. Wang, Y. Mitsukura and T. -P. Jung, "A high-speed brain speller using steady-state visual evoked potentials", *Int. J. Neural Syst.*, vol.24, no.6, 1450019, pp.1-18, 2014. (Impact Factor: 6.400)

20. M.Nakanishi, Y. Wang, Y. -T. Wang, Y. Mitsukura and T. -P. Jung, "Generating visual flickers for eliciting robust steady-state visual evoked potentials at flexible frequencies using monitor refresh rate" *PLoS One*, vol.9, no.6, e99235, 2014. (Impact Factor: 2.776)

21. K. Okugawa, M.Nakanishi, Y. Mitsukura, M. Takahashi, "Experimental verification for driving control of a powered wheelchair by voluntary eye blinking and with environmental recognition", *Trans. Jpn Soc. Mech. Eng.*, vol.80, no.813, p.DR0125, 2014. (in Japanese)
22. K. Okugawa, M.Nakanishi, Y. Mitsukura, M. Takahashi, "Driving control of a powered wheelchair by voluntary eye blinking and with environment recognition", *Appl. Mechanics Mater.*, vol.490, pp.1764-1768, 2014.
23. M.Nakanishi, K. Okugawa, Y, Mitsukura and M. Takahashi, "Voluntary eye blink detection using electrooculogram for controlling powered wheelchairs considering environmental information", *IEEJ Trans. Electron. Inform. Syst.*, vol.133, no.10, pp.1969-1975, 2013. (in Japanese)

Short Communication Papers

1. C. -S. Wei, C. Keller, J. Li, Y. -P. Lin, M.Nakanishi, J. Wagner, W. Wu, Y. Zhang, T. -P. Jung, "Editorial: Inter- and Intra-subject variability in brain imaging and decoding", *Front. Comput. Neurosci.*, vol.15, 791129.
2. M.Nakanishi, M. Xu, Y. Wang, K.-J. Chiang, T.-P. Jung, "Questionable classification accuracy reported in "Designing a sum of squared correlations framework for enhancing SSVEP-based BCIs"", *IEEE Trans. Neural Syst. Rehabil. Eng.*, vol.28, no.1042-1043, 2020.
3. Y. Zhang, D. Guo, F. Li, E. Yin, Y. Zhang, P. Li, Q. Zhao, T. Tanaka, D. Yao, P. Xu, M.Nakanishi, "Correction to "Correlated component analysis for enhancing the performance of SSVEP-based brain-computer interface"", *IEEE Trans. Neural Syst. Rehabil. Eng.*, vol.26, no.8, pp.1645-1646, 2018.

Book Chapters

1. Y. Wang, M.Nakanishi, D. Zhang, "EEG-based brain-computer interfaces", in X. Zheng (Ed.): *Neural Interface: Frontiers and Applications*, Springer, 2019.
2. M.Nakanishi, Y. Wang, T. -P. Jung, "Spatial filtering techniques for improving template-based SSVEP detection", in T. Tanaka and A. Mahnaz (Eds.): *Signal processing and machine learning for brain-machine interfaces*, Institute of Engineering and Technology (IET), pp.219 - 242, 2018.
3. M.Nakanishi, Y. Wang, T. -P. Jung, "Session-to-session transfer in detecting steady-state visual evoked potentials with individual training data", in D. D. Schmorrow and C. M. Fidopiastis (Eds.): Foundations of Augmented Cognition: Neuroergonomics and Operational Neuroscience, *Lecture Notes in Computer Science*, Springer (Cham), vol.9742, pp.253-260, 2016.

Conference Proceedings

1. D. L. Davis, M.Nakanishi, T. P. Jung, "A Comparison Study of Egocentric and Allocentric Visual Feedback for Motor-Imagery Brain-Computer Interfaces," *Proc. IEEE Int. Conf. Syst. Man Cybern.*, pp. 1630-1635, Prague, Czech Republic, Oct. 2022.
2. H, Xu, M.Nakanishi, S. Coulson, "The association between humor comprehension and subjective social well-being in non-native English speakers," *Proc. 44th Ann. Conf. Cog. Sci. Soc.*, July, 2022.
3. C. Xiao, K. -J. Chiang, M.Nakanishi, T. P. Jung, "A Comparison study of single- and multiple-target stimulation methods for eliciting steady-state visual evoked potentials," *Proc. 10th Int. IEEE EMBS Neural Eng. Conf.*, pp.698-701, May, 2021.
4. K. -J. Chiang, M.Nakanishi, T. P. Jung, "Statistically optimized spatial filtering in decoding steady-state visual evoked potentials based on task-related component analysis," *Proc. 42th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, Montreal, Quebec, Canada, Jul., 2020.

5. K. -J. Chiang, C. S. Wei, M.Nakanishi, T. P. Jung, "Cross-subject trasnfer learning improves the practicality of real-world applications of brain-computer interfaces," *Proc. 9th Int. IEEE EMBS Neural Eng. Conf.*, pp.424-427, San Fransisco, CA, USA, Mar., 2019.
6. T. Yu, C. -S. Wei, K. -J. Chiang, M.Nakanishi, T. -P. Jung, "EEG-based user authentication using a convolutional neural netweok," *Proc. 9th Int. IEEE EMBS Neural Eng. Conf.*, pp.1011-1014, San Fransisco, CA, USA, Mar., 2019.
7. M.Nakanishi, Y. -T. Wang, T. -P. Jung, "Optimizing phase intervals for phase-coded SSVEP-based BCIs with template-based algorithm", *Proc. IEEE Int. Conf. Syst., Man, Cybern.*, pp.650-655, Miyazaki, Japan, Oct. 2018.
8. C. -S. Wei, M.Nakanishi, K. -J. Chiang, T. -P. Jung, "Exploring variability in steady-state visual evoked potentials towards high speed BCI speller", *Proc. IEEE Int. Conf. Syst., Man, Cybern.*, pp.474-479, Miyazaki, Japan, Oct. 2018.
9. M.Nakanishi, Y. -T. Wang, T. -P. Jung, "Transferring shared responses across electrode montages for facilitating calibration in high-speed brain spellers", *Proc. 40th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.89-92, Honolulu, HI, USA, Jul. 2018.
10. W. -H. Chan, K. -J. Chiang, M.Nakanishi, Y. -T. Wang, T. -P. Jung, "Evaluating the performance of non-hair SSVEP-based BCIs featureing template-based decoding methods", *Proc. 40th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.1972-1975, Honolulu, HI, Jul. 2018.
11. S. Kanoga, M.Nakanishi, A. Murai, M. Tada, A. Kanemura, "Semi-simulation experiments for quantifying the performance of SSVEP-based BCI after reducing artifacts from trapezius muscles", *Proc. 40th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.4824-4827, Honolulu, HI, Jul. 2018.
12. Y. Tanji, K. Suefusa, M.Nakanishi, T. Tanaka, "Waveform-based multi-stimulus coding for brain-computer interfaces based on steady-state visual evoked potentials", *Proc. 42th IEEE Int. Conf. Acoust. Speech Sig. Process.*, pp.821-825, Calgary, Alberta, Canada, Apr. 2018.
13. M.Nakanishi, Y. Wang, S. -H. Hsu, Y. -T. Wang, T. -P. Jung, "Independent component analysis-based spatial filtering improves template-based SSVEP detection", *Proc. 39th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.3620-3623, Jeju Island, Korea, Jul. 2017.
14. M.Nakanishi, Y. Wang, Y. -T. Wang, T. -P. Jung, "Does frequency resolution affect the classification performance of steady-state visual evoked potentials?", *Proc. 8th Int. IEEE EMBS Neural Eng. Conf.*, pp.341-344, Shanghai, China, May 2017.
15. M. R. Islam, T. Tanaka, M.Nakanishi, M. K. I. Molla, "Frequency recognition of steady-state visual evoked potentials using binary subband CCA with reduced dimension of reference signals", *Proc. 41th IEEE Int. Conf. Acoust. Speech Sig. Process.*, pp. 769-773, Shanghai, China, Mar. 2016.
16. M.Nakanishi, Y. Wang, Y. -T. Wang, and T. -P. Jung, "A dynamic stopping method for improving performance of steady-state visual evoked potential based brain-computer interfaces", *Proc. 37th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.1057-1060, Milano, Italy, Aug. 2015.
17. Y. -T. Wang, M.Nakanishi, S. L. Kappel, P. Kidmose, D. P. Mandic, Y. Wang, C. K. Cheng, and T. -P. Jung, "Developing an online steady-state visual evoked potential-based brain-computer interface system using EarEEG", *Proc. 37th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.2271-2274, Milano, Italy, Aug. 2015.
18. M.Nakanishi, Y. Wang, Y. -T. Wang, Y. Mitsukura and T. -P. Jung, "Enhancing unsupervised canonical correlation analysis-based frequency detection of SSVEPs by incorporating background EEG", *Proc. 36th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.3053-3056, Chicago, IL, USA, Aug. 2014.
19. Y. Wang, M.Nakanishi, Y. -T. Wang, T. -P. Jung, "Enhancing detection of steady-state visual evoked potentials using individual training data", *Proc. 36th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.3037-3040, Chicago, IL, USA, Aug. 2014.

20. X. Chen, Y. Wang, M.Nakanishi, T. -P. Jung, X. Gao, "Hybrid frequency and phase coding for a high-speed SSVEP-based BCI speller", *Proc. 36th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.3993-3996, Chicago, IL, USA, Aug. 2014.

21. M.Nakanishi, Y. Wang, Y. -T. Wang, Y. Mitsukura and T. -P. Jung, "Integrating interference frequency components elicited by monitor refresh rate to enhance frequency detection of SSVEPs", *Proc. 6th Int. IEEE EMBS Neural Eng. Conf.*, pp.1092-1095, San Diego, CA, USA, Nov., 2013.

22. M.Nakanishi, Y. Wang, Y. -T. Wang, Y. Mitsukura and T. -P. Jung, "An approximation approach for rendering visual flickers in SSVEP-based BCI using monitor refresh rate", *Proc. 35th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, pp.2176-2179, Osaka, Japan, Jul. 2013.

23. M.Nakanishi and Y. Mitsukura, "Wheelchair control system using electrooculogram signal processing", *Proc. 19th Korea-Japan Workshop Front. Comput. Vis.*, pp.137-142, Incheon, Korea, Jan. 2013.

24. M.Nakanishi, Y. Mitsukura, Y. Wang, Y. -T. Wang, T. -P. Jung, "Online voluntary eye blink detection method using electrooculogram", *Proc. 2012 Int. Symp. Nonlin. Teory its Appl.*, pp.114-117, Majorca, Spain, Oct. 2012.

25. M.Nakanishi, Y. Mitsukura, "Periodicity detection for BCI based on periodic code modulation visual evoked potentials", *Proc. 37th IEEE Int. Conf. Acoust. Speech Sig. Process.*, pp.665-668, Kyoto, Japan, Mar. 2012.

26. K. Takahashi, M.Nakanishi, Y. Mitsukura, "Recognizing Facial Actions Using RBF Network", *Proc. 2011 Int. Symp. Nonlin. Theory its Appl.*, pp.298-201, Kobe, Japan, Sept. 2012.

27. M.Nakanishi, Y. Mitsukura and A. Hara, "EEG analysis for acoustic quality evaluation using PCA and FDA", *Proc. 20th IEEE Int. Symp. Robot Hum. Interactive Commun.*, pp.321-324, Atlanta, GA, USA, Aug. 2011.

Conference Abstracts

1. M.Nakanishi, A. Miner, T. -P. Jung, J. S. Graves, "Novel steady-state visual evoked potential stimulus assesses afferent and efferent dysfunction in multiple sclerosis", *NANOS 49th Annual Meeting*, Mar, 2023.

2. M.Nakanishi, H, Xu, S. Coulson, "Non-native English speakers are not disadvantageous humor appreciation, but detection, compared with native speakers," *Proc. 44th Ann. Conf. Cog. Sci. Soc.*, July, 2022.

3. Y. Ding, M.Nakanishi, T. P. Jung, "A machine-learning framework using indepedent EEG components for brain-computer interfaces," *Proc. 28th Ann. Mtg. Org. Hum. Brain Mapp.*, 2022.

4. K. -J. Chiang, M.Nakanishi, T. P. Jung, "Binocular visual stimulation for robust and comfortable SSVEP-based BCIs in head-mounted display headsets", *8th Intl. Brain-Comp. Interface Mtg.*, 2021.

5. M.Nakanishi, C. -S. Wei, K. -J. Chiang, T. -P. Jung, "Facilitating calibration in an SSVEP-based BCI via leveraging cross-device shared latent responses", *IEEE Eng. Med. Biol. Soc. Brain Mind Body Workshop*, La Jolla, CA, USA, 2019.

6. S. Kanoga, M.Nakanishi, A. Murai, M. Tada, A. Kanemura, "Practicability of detecting steady-state visual evoked potentials contaminated by intensity-manipulated muscular artifacts", *41th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, Berlin, Germany, 2019.

7. Y. Tanji, M.Nakanishi, T. Tanaka, "Hybrid waveform, frequency, and phase coding for brain-computer interfaces based on steady-state visual evoked potentials", *9th Int. IEEE/EMBS Conf Neural Eng.*, San Fransisco, CA, USA, 2019.

8. S. -H. Hsu, M.Nakanishi, C. -Y. Chang, T. -P. Jung, "Modeling EEG dynamics of self-imagery emotions: A pilot study", *9th Int. IEEE/EMBS Conf Neural Eng.*, San Fransisco, CA, USA, 2019.

9. K. -J. Chiang, C. -S. Wei, M.Nakanishi, T. P. Jung, "Cross-session transfer learning for brain-computer interfaces based on steady-state visual evoked potentials", *Neurosci. 2018*, San Diego, CA, USA, 2018.
10. M.Nakanishi, Y. -T. Wang, T. -P. Jung, "Transferring shared responses across electrode montages for an SSVEP-based BCI", *7th Intl. Brain-Comp. Interface Mtg.*, Pacific Grove, CA, USA, 2018.
11. K. -J. Chaing, W. -H. Chan, M.Nakanishi, Y. -T. Wang, T. -P. Jung, "The factors causing the unstable visual stimulus in portable devices", *7th Intl. Brain-Comp. Interface Mtg.*, Pacific Grove, CA, USA, 2018.
12. N. G. Ogata, F. B. Daga, E. R. Boer, M.Nakanishi, F. A. Medeiros, "Effect of visual crowding in patients with glaucoma", *Ann. Mtg. American Acad. Ophthalmol.*, New Orleans, LA, USA, 2017.
13. Y. Tanji, N. Morikawa, M.Nakanishi, K. Suefusa, T. Tanaka, "Classifying modulation waveforms of visual stimuli via steady-state visual evoked potentials", *39th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, Jeju Island, Korea, 2017.
14. M.Nakanishi, Y. -T. Wang, F. B. Daga, T. -P. Jung, J. K. Zao, N. G. Ogata, F. A. Medeiros, "Detecting preperimetric glaucoma with the nGoggle, a portable brain-computer interface for assessing neural damage", *Ann. Mtg. Assoc. Res. Vision Ophthalmol.*, Baltimore, MD, USA, 2017.
15. Y. -T. Wang, M.Nakanishi, F. B. Daga, N. G. Nara, J. K. Zao, T. -P. Jung, F. A. Medeiros, "Objective assessment of the contrast sensitivity function using the nGoggle", *Ann. Mtg. Assoc. Res. Vision Ophthalmol.*, Baltimore, MD, USA, 2017.
16. C. N. Susanna, F. B. Daga, M.Nakanishi, B. Susanna, Y. -T. Wang, R. Susanna, N. G. Ogata, J. K. Zao, T. -P. Jung, F. A. Medeiros, "Visual function measurements from the nGoggle are associated with patient-reported quality of life in glaucoma", *Ann. Mtg. Assoc. Res. Vision Ophthalmol.*, Baltimore, MD, USA, 2017.
17. F. B. Daga, M.Nakanishi, Y. -T. Wang, T. -P. Jung, J. K. Zao, N. G. Ogata, I. M. Tavares, F. A. Medeiros, "Comparison between the nGoggle and optic coherence tomography for detecting glaucoma", *Ann. Mtg. Assoc. Res. Vision Ophthalmol.*, Baltimore, MD, USA, 2017.
18. M.Nakanishi, T. -P. Jung, Y. -T. Wang, Y. -Y. Chien, J. K. Zao, A. Diniz-Filho, Z. Wu, F. A. Medeiros, "A portable steady-state visual evoked potential-based method for assessment of visual impairment in glaucoma", *Neurosci. 2016*, San Diego, CA, USA, 2016.
19. Y. -T. Wang, F. A. Medeiros, M.Nakanishi, Y. -Y. Chien, C. -S. Wei, J. K. Zao, T. -P. Jung, "Multifocal steady-state visual evoked potential-based assessment for visual field defects using nGoggle", *Neurosci. 2016*, San Diego, CA, USA, 2016.
20. Y. -T. Wang, F. A. Medeiros, M.Nakanishi, J. K. Zao, T. -T. Gan, H. -M. Chang, Y. -Y. Chien, C. -S. Wei, C. -K. Lin, T. -P. Jung, "nGoggle: A multi-focal steady-state visual evoked potential-based assessment of visual field loss", *38th Ann. Int. Conf. IEEE Eng. Med. Biol. Soc.*, Orlando, FL, USA, 2016.
21. M.Nakanishi, Y. Wang, T. -P. Jung, "An online brain-computer interface using dynamically detected steady-state visual evoked potentials", *6th Intl Brain-Comp. Interface Mtg.*, Pacific Grove, CA, USA, 2016.
22. M.Nakanishi, A. Diniz-Filho, E. R. Boer, A. Elhosseiny, F. A. Medeiros, "Visual and auditory induced event-related brain dynamics in glaucoma", *Ann. Mtg. Assoc. Res. Vision Ophthalmol.*, Seattle, WA, USA, 2016.
23. F. A. Medeiros, J. K. Zao, Y. -T. Wang, M.Nakanishi, Y. P. Lin, A. Diniz-Filho, T. -P. Jung, "The nGoggle: A portable brain-based method for assessment of visual field deficits in glaucoma", *Ann. Mtg. Assoc. Res. Vision Ophthalmol.*, Seattle, WA, USA, 2016.
24. T. M. Kuang, E. R. Boer, A. Diniz-Filho, A. Elhosseiny, M.Nakanishi, F. A. Medeiros, "Predicting driving performance under simulated fog conditions in glaucoma", *Ann. Mtg. Assoc. Res. Vision Ophthalmol.*, Seattle, WA, USA, 2016.

25. E. R. Boer, A. Diniz-Filho, A. Elhosseiny, M.Nakanishi, F. A. Medeiros, "Behavioral entropy reveals a breakpoint of driving performance in glaucoma patients", *Ann. Mtg. Assoc. Res. Vision Ophthalmol.*, Seattle, WA, USA, 2016.
26. M.Nakanishi, Y. Wang, T. -P. Jung, "Vertical Target Locations Modulate the Latency of Staedy-State Visual Evoked Potentials", *21th Ann. Mtg. Org. Hum. Brain Mapp.*, Honolulu, Hawaii, USA, June 2015.
27. C. -S. Wei, Y. -P. Lin, Y. Wang, M.Nakanishi, Y. -T. Wang, T. -P. Jung, "Normalized Canonical Correlation for Detection of Steady-State Visual Evoked Potential", *20th Ann. Mtg. Org. Hum. Brain Mapp.*, Hamburg, Germany, June 2014.

Invited Talk

1. M.Nakannishi, "Recent advances in an SSVEP-based BCI", COGS 189: EEG-based brain-computer interfaces, University of California San Diego, La Jolla, CA, Feb. 2022.
2. M.Nakannishi, "Spelling by brain waves: a brain-computer interface based on steady-state visual evoked potentials and its applications", *Japan. Soc. Med. Biol. Eng.*, Japan, Aug, 2021.
3. M.Nakannishi, "Recent advances in an SSVEP-based BCI", COGS 189: EEG-based brain-computer interfaces, University of California San Diego, La Jolla, CA, Feb. 2021.
4. M.Nakannishi, "Recent advances in an SSVEP-based BCI", COGS 189: EEG-based brain-computer interfaces, University of California San Diego, La Jolla, CA, Feb. 2020.
5. M.Nakannishi, "Advanced in event-related potential analysis on the West Coast", Artificial Intelligence Research Center, National Institute of Advanced Industrial Science and Technology, Tokyo, Japan, Aug. 2019.
6. M.Nakannishi, Y. Wang, Y. -T. Wang, T. -P. Jung, "Display-based visual stimulation design for eliciting steady-state visual evoked potentials and its applications", *Intl. Disp. Manuf. Conf. 2017*, Taiepi, Taiwan, Sep. 2017.
7. M.Nakanishi, "Designing a brain-computer interface using steady-state visual evoked potentials and its applications", *Seminar biol. inform. process.*, Tokyo University of Agriculture and Technology, Tokyo, Japan, Sep. 2017.
8. M.Nakanishi, "A high-speed brain-computer interface based on steady-state visual evoked potentials", Brain Research Center, National Chiao Tung University, Shinchu, Taiwan, Sep. 2017.
9. M.Nakanishi, "System design for a high-speed BCI based on SSVEPs", *Mobile Body/Brain Imaging Workshop*, San Diego, CA, Nov. 2016.

PhD Dissertation

Title	:	A High-Speed and Asynchronous Brain-Computer Interface Based on Steady-State Visual Evoked Potentials Elicited by Approximation Stimulation Approach (in Japanese)
Institute	:	Keio University, Japan
Adviser	:	Dr. Yasue Mitsukura

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