Erik Chihhung Chang

Dr. Erik Chihhung Chang is an expert in studying the cognitive processes and brain mechanisms in human motor control. In additional to experimentation and neuroimaging, he also has many experiences in processing big data in social science and applying machine learning techniques in brain and behavioral data. Dr. Chang has received continuous supports from the National Science and Technology Counsel over the past two decades, and has participated in many integrative projects.

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Present Position

Associate Professor
Institute of Cognitive Neuroscience, National Central University, Taiwan

Previous Positions

Division Leader (校務研究發展組組長; February 2020 ~ January 2021)
Division in Institutional Research Data Management & Development
Office of Institutional Research (校務研究辦公室), National Central University

Awards

2021 & 2018 Excellent Research Award, National Central University
(國立中央大學研究傑出獎)
2013 Teaching Award, College of Science, National Central University
(國立中央大學理學院教學優良獎; https://www.science.ncu.edu.tw/102)
2009 Excellent Student Counseling Award, National Central University
(國立中央大學優良導師獎; http://love.adm.ncu.edu.tw/ncu_counsel/tutor-award.php?years_id=11)

Research Projects

1. NSTC 113-2410-H-008 -073 (2024/08/01 ~ 2025/07/31)
   Title: Examining common mechanisms and individual differences of motor and perceptual learning with fMRI, EEG, and classification algorithms (NT$1,092,000)

2. NSTC 112-2410-H-008 -066 (2023/08/01~2024/07/31)
   Title: Examining common mechanisms and individual differences of motor and perceptual learning with fMRI, EEG, and classification algorithms (NT$1,197,000)

3. MOST 108-2410-H008-037-MY4 (2019/08/01~2023/07/31)
   Title: Sequence Learning and Its Transfer across Effectors: A Magnetoencephalography Study. (6,050,000 TWD)

Peer reviewed publications

*indicates corresponding author

Chang, E. C., Chen, L., & Chen, S. Y. (accepted). The universal trend and shifts of digital learning: Big data analysis for academic literature. *Universal Access in the Information Society*.

Lin, W.-J., & **Chang, E. C.*** (2025). Differential contributions of global and local object landmarks in human wayfinding behavior. *Memory & Cognition*, Advance online publication. https://doi.org/10.3758/s13421-025-01807-9 (SSCI, IF=2.1)

Tien, H.-P. & **Chang, E. C.*** (2024). Inequivalent and uncorrelated response priming in motor imagery and execution. *Frontiers in Psychology*. https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2024.1363495/.

Chang, E. C.* (2021). Information theoretic quantification of dedifferentiation in the aging of motor and executive functions. Frontiers in Aging Neuroscience, 13, https://doi.org/10.3389/fnagi.2021.634089. (**SCIE**, IF = 4.364, rank = 21/95 [Q1] in Cognitive Neuroscience)

Meng, F.-W.*, Yao, Z.-F., **Chang, E. C.**, & Chen, Y.-L. (2019). Team sport expertise shows superior stimulus-driven visual attention and motor inhibition. PLoS ONE, 14(5), e0217056. https://doi.org/10.1371/journal.pone.0217056 (**SCIE**, IF = 2.74, rank = 10/111 [Q1] in Multidisciplinary)

Lin, M.-J & **Chang, E. C***. (2019). A Taiwan Norm for the Harvard Group Scale of Hypnotic Susceptibility, Form A. International Journal of Clinical and Experimental Hypnosis. doi:10.1080/00207144.2019.1580959. (**SSCI**, IF = 0.72, rank = 125/275 [Q2] in Clinical Psychology)

Chikara, R. K., **Chang, E. C.**, Lu, Y.-C., Lin, D.-S., Lin, C.-T., & Ko, L.-W.* (2018). Monetary reward and punishment to response inhibition modulate activation and synchronization within the inhibitory brain network. Frontiers in Human Neuroscience, 12(27). doi:10.3389/fnhum.2018.00027. (SCIE, IF = 2.67, rank = 13/73 [Q1] in Behavioral Neuroscience)

Chang, E. C., Chu, C. H., Karageorghis, C. I., Wang, C. C., Tsai, J H., Wang, Y. S., Chang, Y. K.*(2017). Relationship between mode of sport training and general cognitive performance. Journal of Sport and Health Science, 6(1), 89-95. (SCIE, IF = 2.52, rank = 15/261 [Q1] in Orthopedics and Sports Medicine)

Ko, L.-W.*, Shih, Y.-C., Chikara, R. K., Chuang, Y. T., & **Chang, E. C.*** (2016). Neural Mechanisms of Inhibitory Response in a Battlefield Scenario: A Simultaneous fMRI-EEG Study. Frontiers in Human Neuroscience, 10(185). doi: 10.3389/fnhum.2016.00185. (**SCIE**, IF = 2.67, rank = 13/73 [Q1] in Behavioral Neuroscience)

Chen, H.-Y., **Chang, E. C.**, Chen, S. H. Y., Lin, Y.-C., & Wu, D. H.* (2016). Functional and anatomical dissociation between the orthographic lexicon and the orthographic buffer revealed in reading and writing Chinese characters by fMRI. NeuroImage, 129, 105–116. (**SCIE**, IF = 5.835, rank = 4/95 [Q1] in Cognitive Neuroscience)

Chiou, S.-C. & **Chang, E. C.*** (2016). Bimanual coordination learning with different augmented feedback modalities and information type. PLoS One, 11(2), e0149221. doi: 10.1371/journal.pone.0149221. (**SCIE**, IF = 2.806, rank = 10/111 [Q1] in Multidisciplinary)

Shen, S. J., Yau, C.-Y., & **Chang, E. C.*** (2016). Effects of Aerobic Training Intensity on Executive Functions in Middle-to-Old Age Adults. Physical Education Journal, 90(S), 75-90. (**TSSCI**, First Rank Journal)