

Hsing-Hao Lee Curriculum Vitae

Contact Information

Department of Psychology, New York University

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Education

2021 Sep. – 2026 April (expected) Ph.D., Psychology (Cognition and Perception)

2021 Sep. – 2025 May Master of Philosophy, Psychology
Department of Psychology, New York University, USA
Mentor: Dr. Marisa Carrasco

2017 Sep. – 2019 Jun. Master of Science, Psychology (GPA: 3.91/4.0)
Department of Psychology, National Taiwan University, Taiwan
Mentor: Dr. Su-Ling Yeh

2013 Sep. – 2017 Jun. Bachelor of Science, Psychology (GPA: 3.94/4.0)
Department of Psychology, National Cheng Kung University, Taiwan
Mentor: Dr. Shulan Hsieh

Research Interests

1. **Attention:** How does visual attention modulate perception?
2. **Consciousness:** What are the differences between conscious and unconscious mental processes?
3. **Cognitive control:** How do people control and inhibit irrelevant information?

Publications and Manuscripts

1. **Lee, H. H., & Carrasco, M.** (preprint). Covert spatial attention is uniform across cardinal meridians despite differential adaptation. *bioRxiv*.
2. **Lee, H. H., & Carrasco, M.** (2025). Visual adaptation stronger at horizontal than vertical meridian: Linking performance with V1 cortical surface area. *Proceedings of the National Academy of Sciences of the United States of America*, 122, (29) e2507810122.
3. **Lee, H. H.** (2025) Intrinsically photosensitive retinal ganglion cells and visual processing: ipRGCs beyond non-image-forming functions. *Frontiers in Neuroscience*, 19:1635101.
4. **Lee, H. H., Fernández, A., & Carrasco, M.** (2024). Adaptation and exogenous attention interact in the early visual cortex: A TMS study. *iScience*, 27(11), 111155.

5. **Lee, H. H.**, Groves, K., Ripollés, P., & Carrasco, M. (2024). Audiovisual integration in the McGurk effect is impervious to music training. *Scientific Reports*, 14, 3262.
6. **Lee, H. H.**, Liu, G. K., Chen, Y. C., & Yeh, S. L. (2024). Exploring quantitative measures in metacognition of emotion. *Scientific Reports*, 14, 1990.
7. Cheng, T., Chiu, L., Huang, L., Lin, Y. T., **Lee, H. H.**, Chen, Y. C., & Yeh, S. L. (2023). Predictive processing in the “Second Brain”: From gut complex to meta-awareness. In *Expected Experiences* (pp. 170-194). Routledge.
8. **Lee, H. H.**, Chien, S. E., Lin, V., & Yeh, S. L. (2022). Seeing food fast and slow: Arousing pictures and words have reverse priorities in assessing awareness. *Cognition*, 225, 105144.
9. Chen, Y. T., **Lee, H. H.**, Shih, C. Y., Chen, Z. L., Beh, W. K., Yeh, S. L., & Wu, A. Y. (2022). An effective entropy-assisted mind-wandering detection system with EEG signals of MM-SART Database. *IEEE Journal of Biomedical and Health Informatics*, 26(8), 3649-3660.
10. **Lee, H. H.**, Chen, Z. L., Yeh, S. L., Hsiao, J. H., & Wu, A. Y. (2021). When eyes wander around: Mind-wandering as revealed by eye movement analysis with hidden Markov models. *Sensors*, 21, 7569.
11. **Lee, H. H.**, Tu, Y. C., & Yeh, S. L. (2021) In search of blue-light effects on cognitive control. *Scientific Reports*, 11, 15505.
12. **Lee, H. H.**, & Yeh, S. L. (2021). Blue-light effects on saccadic eye movements and attentional disengagement. *Attention, Perception, & Psychophysics*. 83, 1713-1728.
13. Chien, S. E., Chu, L., **Lee, H. H.**, Yang, C. C., Lin, F. H., Yang, P. L., Wang, T. M., & Yeh, S. L. (2019). Age difference in perceived ease of use, curiosity, and implicit negative attitude toward robots. *ACM Transactions on Human-Robot Interaction (THRI)*, 8(2):9.
14. **Lee, H. H.**, & Hsieh, S. (2017). Resting-state fMRI associated with stop-signal task performance in healthy middle-aged and elderly people. *Frontiers in Psychology*, 8:766.

Manuscripts in preparation

1. Yeh, S. L., Li, S. H., **Lee, H. H.**, Kao, Y. W., Goh, J. O. S., Jingling, L., & Tsai, A. C. H. (*under review*). Age-related differences in predicting apparent motion sequences: An fMRI study.
2. **Lee, H. H.**, Kao, Y. W., Goh, J. O. S., & Yeh, S. L. (*in preparation*). Age differences in neural processing of facial expression predictions.
3. Chen, Q., **Lee, H. H.**, Hoxha, K., Fernández, A., Hanning, N. M. & Carrasco, M. (*in preparation*). Does human right frontal eye field (rFEF+) play a critical role in exogenous attention? A TMS study.

Selected Conference Presentations

1. Carrasco, M., Chen, Q., **Lee, H. H.**, Fernández, A., & Hanning N. (2025). *TMS to the prefrontal cortex disrupts endogenous, but not exogenous, attention*. Talk presented at the Annual Meeting of the European Conference on Visual Perception, Mainz, Germany.

2. **Lee, H. H., & Carrasco, M. (2025).** *Endogenous attention enhances contrast sensitivity similarly around cardinal meridians despite differential adaptation effects.* Poster presented at the Annual Meeting of the Vision Sciences Society, Tampa, FL.
3. Chen, Q., **Lee, H. H.,** Hoxha, K., Fernández, A., Hanning, N. M. & Carrasco, M. (2025). *Does human right frontal eye field (rFEF+) play a critical role in exogenous attention? A Transcranial Magnetic Stimulation (TMS) study.* Poster presented at the Annual Meeting of the Vision Sciences Society, Tampa, FL.
4. **Lee, H. H., & Carrasco, M. (2024).** *Visual adaptation is more pronounced at the horizontal than vertical meridian.* Poster presented at the Annual Meeting of the Vision Sciences Society, Tampa, FL.
5. **Lee, H. H.,** Fernández, A., & Carrasco, M. (2023). *Adaptation modulates the effect of covert exogenous attention in early visual cortex – A TMS study.* Poster presented at the Annual Meeting of the Vision Sciences Society, Tampa, FL.
6. **Lee, H. H.,** Liu, G. K., & Yeh, S. L. (2021) *I know I'm happy, and I'm right: Metacognition of emotion.* Poster presented at the Annual Meeting of European Conference on Visual Perception, Virtual Meeting.
7. Cheng, T., Chiu, L., Huang, L. T., Lin, Y. T., Chen, Y. C., **Lee, H. H.,** & Yeh, S. L. (2021) Metacognitive confidence in perception, interoception, and memory. Poster presented at the Conference of Metacognition: New developments and challenges, Virtual Meeting.
8. **Lee, H. H.,** Chien, S. E., Lin, V., & Yeh, S. L. (2021). *Which comes first? Examining breaking continuous flash suppression time of high-calorie and low-calorie foods.* Poster presented at the Annual Meeting of the Vision Sciences Society, Virtual meeting.
9. Chen, Z. L., **Lee, H. H.,** Chen, Y. T., Wu, A. Y., & Yeh, S. L. (2021). *The mind's eye: Mind-wandering revealed by eye movement hidden Markov model.* Poster presented at the Annual Meeting of the Vision Sciences Society, Virtual meeting.
10. Kao, Y. W., **Lee, H. H.,** Goh, J. O. S., & Yeh, S. L. (2020). *Age-related differences in the statistical regularity of emotional faces.* Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, Virtual meeting.
11. **Lee, H. H.,** Shih, C. Y., Chen, Z. L., Wu, A. Y., & Yeh, S. L. (2019). *Are you concentrating or mind-wandering? Electroencephalogram signals reveal differences in attentional states.* Poster presented at the Annual Meeting of the Society for Neuroscience, Chicago, IL.
12. **Lee, H. H. & Yeh, S. L. (2019).** *Blue-light effects on the gap effect.* Poster presented at the Annual Meeting of the Vision Sciences Society, Tampa, FL.
13. **Lee, H. H.,** Chen, Z. L., Chen, Y. T., Shih, C. Y., Beh, W. K., Wu, A. Y., & Yeh, S. L. (2019). *The heart never lies: Heart rate variability as an index of sustained attention.* Poster presented at the National Taiwan University-Kyoto University International Symposium for Cognitive Neuroscience, Taipei, Taiwan.

14. **Lee, H. H.**, Lin, F. H., Chien, S. E., & Yeh, S. L. (2018). *Food information processed unconsciously under continuous flash suppression*. Oral presentation at the Joint Conference of National Taiwan University, Peking University, and Chinese University of Hong Kong, Hong Kong.
15. **Lee, H. H.** & Hsieh S. (2017). *The aging effect on time perception: An ERP study*. Poster presented at the 13th Asia Pacific Conference on Vision, Tainan, Taiwan.
16. **Lee, H. H.** & Hsieh S. (2016). *The relation between resting-state fMRI and stop-signal task performance in healthy middle-aged and elderly people*. Poster presented at the 55th Annual Taiwan Psychology Association Meeting, Tainan, Taiwan.

Research Experience

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| 2021 – | Doctorate Student in Carrasco Lab
Department of Psychology, New York University
Principal Investigator: Dr. Marisa Carrasco
<i>Duties:</i> Designed, collected and analyzed psychophysics, TMS, and fMRI experiments |
| 2017 – 2021 | Master's Student and Research Assistant in EPA (Explorer of Perception and Attention) Lab
Department of Psychology, National Taiwan University
Principal Investigator: Dr. Su-Ling Yeh
<i>Duties:</i> Designed, collected and analyzed eye-tracking, fMRI, EEG, and behavioral experiments |
| 2016 – 2017 | Research Assistant in CASE (Control, Aging, Sleep, and Emotion) Lab
Department of Psychology, National Cheng Kung University
Principal Investigator: Dr. Shulan Hsieh
<i>Duties:</i> Collected and analyzed EEG, fMRI, and behavioral data from older adults |

Awards and Honors

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| 2025 – 2026 | Taiwanese Overseas Pioneers Grant
Issued by National Science and Technology Council (NSTC), Taiwan
<i>PhD Candidate in Social Sciences</i> |
| 2025 | Ted Coons Graduate Student Travel Award
Issued by Department of Psychology, New York University, USA
<i>Vision Sciences Society, Florida, USA</i> |
| 2023 | Graduate School of Arts and Science Dean's Conference Fund
Issued by New York University, USA
<i>Vision Sciences Society, Florida, USA</i> |
| 2021 – 2025 | Taiwan's Government Fellowship for Studying Ph.D. Abroad
Issued by Ministry of Education, Taiwan
<i>Area: Cognitive Neuroscience</i> |

- 2019 **College of Science Student Travel Award**
 Issued by National Taiwan University
Summer School Program at University of California, Berkeley, USA
- 2019 **Scholarship for Students Attending International Academic Conferences**
 Issued by Ministry of Science and Technology, Taiwan
Vision Sciences Society, Florida, USA
- 2017 **Scholarship for Students Attending International Academic Conferences**
 Issued by National Cheng Kung University
Asia-Pacific Conference on Vision, Tainan, Taiwan
- 2016 **College Student Research Scholarship**
 Issued by Ministry of Science and Technology, Taiwan
- 2013 – 2016 **Academic Excellence Awards (awarded every school year)**
 Issued by Department of Psychology, National Cheng Kung University
Top 5% GPA among the school year in Psychology Department

Teaching Experience

- 2025 Fall TA for Undergraduate *Cognition*, New York University
- 2025 Summer Instructor for Undergraduate *Cognition*, New York University
- 2025 Spring TA for Undergraduate *Perception*, New York University
- 2024 Fall TA for Undergraduate *Perception*, New York University
- 2024 Summer Instructor for Undergraduate *Perception*, New York University
- 2024 Spring TA for Undergraduate *Perception*, New York University
- 2023 Fall TA for Graduate *Perception*, New York University
- 2019 Spring TA for *Seminar in Graduate Institute of Psychology*, National Taiwan University
- 2018 Fall TA for *Introduction to Psychology*, National Taiwan University
- 2017 – 2018 TA for *Statistics in Psychology and Education*, National Taiwan University
- 2017 Spring TA for *Cognitive Psychology*, National Cheng Kung University

Graduate Course work

- 2024 Fall Area Seminar: Perception & Attention
- 2023 Fall Psychophysics
- 2023 Spring Computational Cognitive Modeling
- 2023 Spring Learning and Memory
- 2022 Fall Mathematical Tools for Simulation and Data Analysis
- 2022 Spring Functional Magnetic Resonance Imaging (fMRI) Lab
- 2022 Spring Behavioral and Cognitive Neuroscience
- 2021 Fall Perception
- 2021 Fall Mathematical Tools for Neural and Cognitive Science

Ad-hoc Reviewer

Acta Psychologica, Cognition, Frontiers in Human Neuroscience, Frontiers in Psychology, IEICE Transactions on Information and Systems, Neuroscience of Consciousness, PloS One, Scientific Reports

Professional Affiliations

Asian-Pacific Conference on Vision (APCV), Cognitive Neuroscience Society (CNS), European Conference on Visual Perception (ECVP), Taiwanese Psychological Association (TPA), Society for Neuroscience (SfN), Vision Sciences Society (VSS),

Technical Expertise

R, MATLAB, Python, EEG (Neuroscan), fMRI (certified operator for Siemens Allegra 3T), Eye-tracker (EyeLink, Tobii), TMS (Brainsight, Magstim, MagVenture), Four-mirror stereoscope