

DONGCHENG HE, PHD

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My research focuses on understanding human visual perception and cognition through eye-tracking, EEG, psychophysics, and computational modeling. Specifically, I investigate how the brain encodes, learns, and imitates others' body movements, from early visual processing to sensorimotor transformations.

ACADEMIC EXPERIENCE

The Hong Kong University of Science and Technology <i>Research Assistant Professor, Division of Social Science</i> <i>Postdoctoral Fellow, Division of Social Science</i>	HK SAR 7, 2026 - now 7, 2025 - 7, 2026
IData, Hefei Comprehensive National Science Center <i>Associate Investigator, Institute of Computational Social Science</i>	China 4, 2024 - 5, 2025
University of California, Berkeley <i>Postdoctoral Scholar, School of Optometry and Vision Science</i>	USA 4, 2023 - 3, 2024
University of Denver <i>Ph.D., Electrical and Computer Engineering</i>	USA 9, 2017 - 3, 2023
Huazhong University of Science and Technology <i>B.Eng., Telecommunications Engineering</i>	China 9, 2013 - 6, 2017

PUBLICATIONS

*: Corresponding Author #: Equal Contribution

Dongcheng He*, Angeline Yang, Danial R. Coates, Haluk Ogmen, Susana Chung. (Under Review) “Revealing Contour Integration-Related ERPs through Temporal Separation from Early Visual Evoked Potentials”

Dongcheng He, Antoni B. Chan, Janet H. Hsiao*. (2026) “Understanding Aging-Related Changes in Face Scanning Behavior through Integrating Deep Neural Networks and Hidden Markov Models”. In *Proceedings of the Annual Meeting of the Cognitive Science Society (Vol. 48)* (oral presentation, accept rate=9.3%)

Alice Yang#, **Dongcheng He**#, Zhijie Xiong, Hui Zhang, Janet H. Hsiao*. (2026) “Differential Associations between Autistic Traits and Eye Movement Consistency in Face and Object Recognition in Neurotypical Adults”. In *Proceedings of the Annual Meeting of the Cognitive Science Society (Vol. 48)*

Haoming Qi, **Dongcheng He***. (2025) “Dynamic Facial Trustworthiness Perception in Real-time Social Contexts”. *Frontiers in Psychology*. 16:1614643. doi:10.3389/fpsyg.2025.1614643

Dongcheng He, Shaoying Wang, and Haluk Ogmen. (2025) “Spatial-temporal Topological Features in Eye Tracking Data are Informative for Neural Disorder Screening”. *Investigative Ophthalmology & Visual Science* 66, no. 8: 3893-3893.

Einstina Wang, **Dongcheng He**, Susana Chung. (2025) “Perceptual Filling-in of Motion Speed at the Physiological Blind Spot”. *Journal of Vision* 25, 9: 2702. doi:<https://doi.org/10.1167/jov.25.9.2702>

Angeline Yang, **Dongcheng He**, Daniel R. Coates, Haluk Ogmen, Susana Chung. (2025) “Connecting the Lines: Contour integration is unaffected by visual input source and quality”. *Journal of Vision* 25, 9: 1762. doi:<https://doi.org/10.1167/jov.25.9.1762>

Dongcheng He*, Susana Chung. (2024) “Using Natural Language Processing to Link Patients’ Narratives to Visual Capabilities and Sentiments”. *Optometry and Vision Science* 101(6):p 379-387, June 2024. | DOI: 10.1097/OPX.0000000000002154

Dongcheng He*, Haluk Ogmen. (2024)"The Roles of Elongation and Symmetry in Developing Reference Frames ". *Frontiers in Psychology*.15:1402156. doi: 10.3389/fpsyg.2024.1402156

Dongcheng He, Angeline Yang, Daniel R. Coates, Haluk Ogmen, Susana Chung. (2024) “Magnitude of Middle Temporal N300 Reflects Contour Fidelity in Contour Integration.” *Journal of Vision*. 2024; 24(10):311. <https://doi.org/10.1167/jov.24.10.311>

Rijul Saurabh Soans#, **Dongcheng He#**, Susana Chung. (2024) “Towards determining the location of the Preferred Retinal Locus of patients with macular disease: A deep learning-based simulation.” *Journal of Vision*. 2024; 24(10):1300. <https://doi.org/10.1167/jov.24.10.1300>

Dongcheng He, Tulsi J. Prabhakaran, Einstina Wang, and Susana TL Chung. (2024) "Analyzing Electronic Medical Records of Low Vision Patients using a Natural Language Processing Framework." *Investigative Ophthalmology & Visual Science* 65, no. 7: 5472-5472.

Dongcheng He#, Dat-Thanh Nguyen#, Haluk Ogmen, Shigeaki Nishina*, Arash Yazdanbakhsh. (2023). "Perception of Rigidity in Three- and Four-Dimensional Spaces". *Frontiers in Psychology*, 14:1180561. doi: 10.3389/fpsyg.2023.1180561

Dongcheng He, Haluk Ogmen*. (2023). “A Neural Model for Vector Decomposition and Relative-Motion Perception”. *Vision Research*, 202, 108142. doi:<https://doi.org/10.1016/j.visres.2022.108142>

Dongcheng He, Haluk Ogmen. "Determinants of Canonical Forms in Memory Storage and Object Recognition." *Journal of Vision* 23, no. 9 (2023): 4695-4695.
<https://doi.org/10.1167/jov.23.9.4695>

Dongcheng He, Haluk Ogmen. "A neural network model for vector decomposition, reference-frame selection, and relative-motion perception." *Journal of Vision* 22, no. 14 (2022): 3040-3040. <https://doi.org/10.1167/jov.22.14.3040>

Dongcheng He, Haluk Ogmen*. (2021). "Sensorimotor Self-organization via Circular Reactions". *Frontiers in Neurorobotics*, 15:658450.

CONFERENCE PRESENTATIONS AS THE PRESENTING AUTHOR

Talks

"Understanding Aging-Related Changes in Face Scanning Behavior through Integrating Deep Neural Networks and Hidden Markov Models." Cognitive Science Society Annual Meeting (CogSci 2026), Rio de Janeiro, Brazil

"Magnitude of Middle Temporal N300 Reflects Contour Fidelity in Contour Integration." Vision Sciences Society Annual Meeting (VSS 2024), St-Pete, FL

"Revealing Cognitive Hubs in the Mirror Neuron System by Topological Data Analysis." Chinese Automation Congress (CAC 2024), Qingdao, China

Posters

"Spatial-temporal Topological Features in Eye Tracking Data are Informative for Neural Disorder Screening." Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO 2025), Salt Lake City, UT

"A Natural Language Processing Framework on Analyzing Electronic Health Records of Low Vision Patients." Annual Meeting of the Association for Research in Vision and Ophthalmology (ARVO 2024), Seattle, WA

"Determinants of Canonical Forms in Memory Storage and Object Recognition." Vision Sciences Society Annual Meeting (VSS 2023), St-Pete, FL

"Object Recognition, Memory, and Mental Rotation." Annual Workshop on Object Perception, Attention, and Memory (OPAM 2023), Boston, MA

"A Neural Network Model for Vector Decomposition, Reference-frame Selection, and Relative-motion Perception." Vision Sciences Society Annual Meeting (VSS 2021), Virtual

PATENTS

Chinese Patent ZL2025101512024 “A Wavelet Transform-Based Method for Mitigating Site Effects in Functional Brain Networks.” Linyuan Lü, Hao Wang, **Dongcheng He**, Guolin Guo. 2026-01-13.

INVITED TALKS

World Young Scientist Summit 2024, Open Forum for Youth, Wenzhou, China (November 17th, 2024)

<http://zj.news.cn/20241119/8581729b7ebd44558b529eb9325173a9/c.html>

OPTICA Vision and Color Summer Data Blast, Clinical Vision Sciences Technical Group, Online (August 28th, 2024)

[https://www.optica.org/get_involved/technical_groups/bmo/clinical_vision_sciences_\(vs\)/?videoId=6361751938112](https://www.optica.org/get_involved/technical_groups/bmo/clinical_vision_sciences_(vs)/?videoId=6361751938112)

Banyan Tree Hub, Synchronous Reading Club, Online (July 31st, 2024)

<https://www.sciocompass.com/community/science/63/114>

IEEE Denver Computer, Information Theory, and Robotics Society & Computational Intelligence Society – Technical Meeting, Denver, USA (April 19th, 2023)

<https://r5.ieee.org/denver-cs/honors/>

RESEARCH GRANTS

Department of Science and Technology of Guangdong Province “1+1+1” Joint Funding Program (Co-I; PI: Janet H. Hsiao). Title: Cognitive Prediction Technology Research of Elderly-Assisting Robots with Human-Machine Isomorphism. 2026-2028

Faculty Development Fund, Division of Social Science, Hong Kong University of Science and Technology. 2026-2027

Research Fund for Postdoctoral Fellows, School of Humanities and Social Science, Hong Kong University of Science and Technology. 2025-2026

SERVICES

Committee Member: Chinese Information Processing Society (CIPS), Cognitive Science Society (CogSci)

Member: Vision Science Society (VSS), Association for Research in Vision and Ophthalmology (ARVO)

Reviewer: Vision Research, International Journal of Modern Physics C, China Automation Congress 2025, Frontiers in Physiology, Frontiers in Cognition, Frontiers in

Psychology, Current Psychology, Biological Psychology, Neuropsychologia, Cognition,
Social Cognitive and Affective Neuroscience, CogSci 2026, ICME 2026

AWARDS & HONORS

Research Travel Grant, 2026, Hong Kong University of Science and Technology.

Senior Investigator Qualification in Humanity and Social Science, 2025, Department of
Human Resources and Social Security of Anhui Province of China.

High-level Talent of the Hefei City, 2024, Bureau of Human Resources and Social Security
of Hefei City of China.

Graduate Assistantship (Full Doctorate Scholarship), 2017-2023, University of Denver.

People's Scholarship, 2014, Huazhong University of Science and Technology.

Provincial Outstanding High School Graduate, 2013, Department of Education of Jilin
Province of China.