

Exponent®
Engineering & Scientific Consulting

Jake Whritner, Ph.D.

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Professional Profile

Dr. Jake Whritner is a vision scientist specializing in perception and human behavior. His work leverages human subjects research to investigate the capabilities of the human visual system, particularly in processing motion and depth information. Drawing on his background in visual perception, Dr. Whritner examines human factors in various contexts, including motor vehicle accidents and product design. He also manages user studies, including those focused on visual comfort and virtual reality (VR). Additionally, Dr. Whritner uses mixed methods, including surveys and interviews, to evaluate user behavior and provide insights for product design and risk assessment.

Dr. Whritner earned his Ph.D. in Psychology from the University of Texas at Austin, where he used human psychophysics to study 3D motion perception. His dissertation work tested the contribution of various cues to depth and motion that the human visual system relies on to interact with the dynamic 3D world. In one related project, Dr. Whritner created a VR environment to test how participants' ability to track a moving target depends on both monocular and binocular cues.

In addition to his scientific expertise, Dr. Whritner also has a background in the humanities. During his B.A. and M.A. in film studies, he focused on how filmmakers guide and hold viewer attention, setting the stage for his interest in how the human visual system prioritizes information relevant to a given task.

Academic Credentials & Professional Honors

Ph.D., Psychology, University of Texas, Austin, 2022

M.A., Film, The University of Kent, 2016

B.A., Cinema Studies, New York University, 2015

Clarke Burnham Travel Grant, University of Texas at Austin (2019)

Lloyd Jeffress Fellowship, University of Texas at Austin (2018)

Professional Development Award, University of Texas at Austin (2018)

Center for Perceptual Systems Training Grant, NIH T32 EY21462-6 (2017-2018)

School of Arts Postgraduate International Student Scholarship, University of Kent (2015)

Student & Early Career Award, British Society of Aesthetics (2015)

Tom Hopkins Award for Departmental Service, New York University (2015)

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Founders' Day Award for Outstanding Scholarship, New York University (2015)

Tisch Scholarship for Transfer Students, New York University (2013)

Prior Experience

Graduate Research Assistant, The University of Texas at Austin, 2017-2022

Research Assistant, Rutgers University—Newark, 2016-2017

General Student Ambassador, University of Kent, 2015-2016

Archivist, Projectionist, and AV Technician, New York University, 2013-2015

Publications

Yang, S. C. H., Rank, C., Whritner, J. A., Nasraoui, O., & Shafto, P. (2023). Human Variability and the Explore–Exploit Trade-Off in Recommendation. Cognitive Science, 47(4), e13279.

Whritner, J.A., Czuba, T.B., Cormack, L.K., & Huk, A.C. (2021). Spatiotemporal integration of isolated binocular three-dimensional motion cues. Journal of Vision, 21(10), 2. https://doi.org/10.1167/jov.21.10.2

Zhang, R., Walshe, C., Liu, Z., Guan, L., Muller, K., Whritner, J., ... & Ballard, D. (2020, April). Atari-head: Atari human eye-tracking and demonstration dataset. In Proceedings of the AAAI conference on artificial intelligence, 34(4), 6811-6820.

Bonnen, K., Czuba, T., Whritner, J. A., Kohn, A., Huk, A. C., Cormack, L. K. (2020). Binocular viewing geometry shapes the neural representation of the dynamic three-dimensional environment. Nature Neuroscience, 23(1), 113–121. https://doi.org/10.1038/s41593-019-0544-7

Zhang, R., Liu, Z., Zhang, L., Whritner, J. A., Muller, K. S., Hayhoe, M. M., & Ballard, D. H. (2018). Agil: Learning attention from human for visuomotor tasks. Proceedings of the European Conference on Computer Vision (ECCV), 663–679.

Wallisch, P., & Whritner, J. A. (2017). Strikingly Low Agreement in the Appraisal of Motion Pictures. Projections: The Journal for Movies and Mind, 11(1), 102–120. http://dx.doi.org/10.3167/proj.2017.110107

Presentations

Whritner, J.A., Panfili, D.P., Hayhoe, M.M., Huk, A.C., Cormack, L.K. (2021, May). Testing the generality of depth tracking deficits in realistic virtual environments. Poster presented at the annual conference of the Vision Sciences Society (VSS).

Whritner, J. A., Czuba, T.B., Cormack, L., Huk, A.C. (2019, May). Temporal integration of isolated 3D motion cues. Poster presented at the annual conference of the Vision Sciences Society (VSS), St. Pete Beach, Florida.

Whritner, J. A., & Wallisch, P. (2016, July). Strikingly low agreement in the appraisal of motion pictures. Paper presented at the 31st International Congress of Psychology (ICP), Yokohama, Japan. Abstract retrieved from the International Journal of Psychology, 51, 834–845. doi:10.1002/ijop.12331.

Whritner, J. A., & Wallisch, P. (2015, June). A Neurocinematic Approach to the Appraisal of Film. Paper presented at the annual conference of the Society for the Cognitive Study of the Moving Image (SCSMI),

London, England.

Whritner, J. A. (2015, February). A Neurocinematic Approach to Shocking Cinema. Paper presented at the NYU Cinema Studies Student Conference.