

CURRICULUM VITAE

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Education

- 2005 **Harvard University**, Department of Psychology
Ph.D. in Psychology (Advisor: Prof. Patrick Cavanagh)
Thesis: *The Role of Attention in Position Encoding*
- 2000 **Yonsei University**, Graduate Program in Cognitive Science
M.A. in Cognitive Science (Advisor: Prof. Min-Shik Kim)
Thesis: *The Role of Feature-Driven Spatial Attention on Contextual Cueing Effect*
- 1998 **Yonsei University**, Department of Psychology
B.A. in Psychology (summa cum laude)

Academic Appointments

- 2016-present **Sungkyunkwan University**, Department of Biomedical Engineering
Center for Neuroscience Imaging Research (CNIR), Institute of Basic Science (IBS)
Assistant Professor
- 2010-2016 **Dartmouth College**, Department of Psychological and Brain Sciences
Assistant Professor
- 2007-2009 **Massachusetts Institute of Technology**, Department of Brain and Cognitive
Sciences / McGovern Institute of Brain Research
Postdoctoral Associate (Advisor: Prof. Nancy Kanwisher)
- 2005-2007 **Harvard University**, Department of Psychology / MGH NMR Center
Postdoctoral Fellow (Advisor: Prof. Yuhong Jiang)

Research Interests

Visual Perception and Cognition; Cognitive Neuroscience

- ♦ Areas of Expertise: - Neural Basis of Visual Perception and Cognition
- Attention and Working Memory
- Motion and Position Perception
- Multisensory Processing
- ♦ Techniques Used: - Functional Magnetic Resonance Imaging (fMRI)
- Behavioral Method

Academic Awards

- 2002- 2005 Kwanjeong Educational Foundation Fellowship (full scholarship)
- 2002, 2004 Vision Sciences Society Student Travel Award

Publications

Journal Articles

- Yu, Q., & Shim, W. M. (2016). Modulating foveal representation can influence visual discrimination in the periphery. *Journal of Vision*, 16(3):15, 1-12.
- Hong, S., & Shim, W. M. (2016). When audiovisual correspondence disturbs visual processing. *Experimental Brain Research*, 234, 1325-1332.
- Chong, E., Familiar, A., & Shim, W. M. (2015). Reconstructing representation of dynamic visual objects in early visual cortex. *PNAS*, 113, 1453-1458.
- Uddenberg, S., & Shim, W. M. (2015). Seeing the world through target-tinted glasses: Positive mood broadens perceptual tuning. *Emotion*, 15, 319-328.
- Chong, E., Hong, S., & Shim, W. M. (2014). Color updating on the apparent motion path. *Journal of Vision*, 14(14):8, 1-12.
- Li, H.-H., Shim, W. M., & Cavanagh, P. (2014). Backward position shift in apparent motion. *Journal of Vision*, 14(1):16, 1-10.
- Shim, W. M., Jiang, Y. V., & Kanwisher, N. (2013). Redundancy gains in retinotopic cortex. *Journal of Neurophysiology*, 110, 2227-2235.
- Shim, W. M., Alvarez, G. A., Vickery, T. J., & Jiang, Y. V. (2010). The number of attentional foci and their precision are dissociated in the posterior parietal cortex. *Cerebral Cortex*, 20, 1342-1349.
- Jiang, Y. V., Kwon, M., Shim, W. M., & Won, B. -Y. (2010). Redundancy effects in the perception and memory of visual objects. *Visual Cognition*, 18, 1233-1252.
- Vickery, T. J., Shim, W. M., Chakravarthi, R., Jiang, Y. V., & Luedman, R. (2009). Supercrowding: Weakly masking a target expands the range of crowding. *Journal of Vision*, 9:12, 1-15.
- Jiang, Y. V., Shim, W. M., & Makovski, T. (2008). Dissecting object complexity from object similarity on visual working memory, *Perception & Psychophysics*. 70, 1581-1591 (equal contribution of all authors).
- Shim, W. M., Alvarez, G. A., & Jiang, Y. V. (2008). Spatial separation between targets constrains maintenance of attention on multiple objects, *Psychonomic Bulletin & Review*. 15, 390-397.
- Williams, M. A., Baker, C. I., Op de Beeck, H. P., Shim, W. M., Dang, S., Triantafyllou, C., & Kanwisher, N. (2008). Feedback of visual object information to foveal retinotopic cortex, *Nature Neuroscience*, 11, 1439-1445.
- Makovski, T., Shim, W. M., & Jiang, Y. V. (2006). Interference from filled delays on visual change detection, *Journal of Vision*, 6, 1459-1470.
- Shim, W. M., & Cavanagh, P. (2006) Bi-directional illusory position shifts toward the end point of apparent motion, *Vision Research*. 46, 3214-3222.
- Shim, W. M., & Cavanagh, P. (2005) Attentive tracking shifts the perceived location of a nearby flash, *Vision Research*, 45, 3253-3261.
- Shim, W. M., & Cavanagh, P. (2004). Illusory displacement of flash location depends on the perceived direction of bistable quartet motion, *Vision Research*, 44, 2393-2401.
- Shim, W.-M., & Kim, M.-S. (2000). Effects of spatial attention for words on implicit memory, *Korean Journal of Cognitive Science*, 11, 13-22.

Book Chapters and Proceedings

- Jiang, Y. V., Makovski, T., & Shim, W. M. (2008). Memory for features, conjunctions, objects, and locations. *The Visual World in Memory*, J.R.Brockmole (Eds.), 33-65. Psychology Press.
- Jiang, Y. V., King, L. W., Shim, W. M., & Vickery, T. J., (2006). Visual implicit learning overcomes limits in human attention. *Proceedings in the 25th Army Science Conference*.

Presentations

Invited Symposia

- Shim, W. M. (2016). The role of feedback in vision. Invited talk at the Korean Society of Human Brain Mapping annual meeting, Seoul, South Korea.
- Shim, W. M. (2016). Reconstructing neural representations of dynamic visual objects. Invited talk at the 9th UK-Korea Neuroscience symposium, Seoul, South Korea.
- Shim, W. M. (2012). Neural representation in the apparent motion path. Invited talk at the symposium at the Annual Meeting of Asian-Pacific Conference on Vision, Incheon, South Korea.

Conference Presentations

- Hong, S., Yu, Q., & Shim, W. M. (2016). Subcortical and cortical color representation and attentional modulation. Poster presentation at the Society for Neuroscience 2016 Annual Meeting, San Diego, California.
- Yu, Q., & Shim, W. M. (2016). Occipital, parietal, and frontal cortices maintain only task-relevant features of multi-feature objects in visual working memory. Talk presentation at the Vision Sciences Society 16th Annual Meeting, St. Pete Beach, Florida.
- Ziman, K., Familiar, A., & Shim, W. M. (2016). Positive affect worsens ensemble coding performance. Poster presentation at the Vision Sciences Society 16th Annual Meeting, St. Pete Beach, Florida.
- Hong, S., Yu, Q., & Shim, W. M. (2016). Attentional modulation of color representation in human lateral geniculate nucleus. Poster presentation at the Vision Sciences Society 16th Annual Meeting, St. Pete Beach, Florida.
- Yu, Q., & Shim, W. M. (2015). Neural correlates of dynamic updating in visual working memory in parietal and frontal cortices. Talk presentation at the Society for Neuroscience 2015 Annual Meeting, Chicago, Illinois.
- Familiar, A., Uddenberg, S., & Shim, W. M. (2015). Positive affect reduced visual crowding. Poster presentation at the Vision Sciences Society 15th Annual Meeting, St. Pete Beach, Florida.
- Hong, S., Yu, Q., & Shim, W. M. (2015). Color representation in lateral geniculate nucleus: a human fMRI study. Talk presentation at the Vision Sciences Society 15th Annual Meeting, St. Pete Beach, Florida.
- Ma, F., & Shim, W. M. (2015). Functional interactions of feature-selective responses in MT+ and LOC and primary visual cortex in dynamic feature interpolation during apparent motion. Poster presentation at the Vision Sciences Society 15th Annual Meeting, St. Pete Beach, Florida.
- Yu, Q., & Shim, W. M. (2015). Task-modulated, feature-selective responses in early visual, parietal and frontal cortices during visual working memory maintenance. Poster presentation at the Vision Sciences Society 15th Annual Meeting, St. Pete Beach, Florida.
- Familiar, A., Chong, E., & Shim, W. M. (2014). Interpolated visual features during apparent motion are represented in primary visual cortex. Poster presentation at the Vision Sciences Society 14th Annual Meeting, St. Pete Beach, Florida.
- Yu, Q., & Shim, W. M. (2014). Neural correlates of visual working memory precision in frontal and parietal cortex. Talk presentation at the Vision Sciences Society 14th Annual Meeting, St. Pete Beach, Florida.
- Hong, S., & Shim, W. M. (2014). When does multisensory integration disturb visual processing? Talk presentation at the International Multisensory Research Forum Annual Meeting, Amsterdam, Netherland.
- Chong, E., Hong, S., & Shim, W. M. (2013). Color updating on the apparent motion path. Poster presentation at the Vision Sciences Society 13th Annual Meeting, Naples, Florida.
- Li, H., -H., Shim, W. M., & Cavanagh, P. (2013). Cross-modal motion-induced position shift. Poster presentation at the Vision Sciences Society 13th Annual Meeting, Naples, Florida.

- Shim, W. M., Uddenberg, S., & Lee, Y. S. (2013). Changing pitch modulates motion-direction information in V1. Talk presentation at the Vision Sciences Society 13th Annual Meeting, Naples, Florida.
- Chong, E., Yu, Q., & Shim, W. M. (2012). Representation of stimulus features in V1 along the apparent motion path. Poster presentation at the Vision Sciences Society 12th Annual Meeting, Naples, Florida.
- Uddenberg, S., & Shim, W. M. (2012). The influence of emotion on feature-based attention: Positive emotion broadens perceptual tuning curves. Poster presentation at the Vision Sciences Society 12th Annual Meeting, Naples, Florida.
- Yu, Q., Chong, E., & Shim, W. M. (2012). Interrupting foveal feedback representation impairs visual discrimination in the periphery. Poster presentation at the Vision Sciences Society 12th Annual Meeting, Naples, Florida.
- Chong, E., & Shim, W. M. (2011). Representation of stimulus identity in apparent motion. Poster presentation at the Vision Sciences Society 11th Annual Meeting, Naples, Florida.
- Shim, W. M., & Kanwisher, N. (2010). Visual working memory information in foveal retinotopic cortex during the delay. Talk presentation at the Vision Sciences Society 10th Annual Meeting, Naples, Florida.
- Shim, W. M., Webster, J., & Kanwisher, N. (2009). Peripheral information in foveal cortex: generalizing across task and stimuli. Talk presentation at the Vision Sciences Society 9th Annual Meeting, Naples, Florida.
- Jiang, Y.V., Kwon, M., & Shim, W. M. (2008). Perception and memory of visual objects in clutter, Talk presentation at the Psychonomic Society 49th Annual Meeting, Chicago, Illinois.
- Shim, W. M., Jiang, Y. V., & Kanwisher, N. (2008). Types and tokens in the ventral visual pathway: The neural representation of multiple visual objects, Talk presentation at the Vision Sciences Society 8th Annual Meeting, Naples, Florida.
- Vickery, T. J., Shim, W. M., Chakravarthi, R., Jiang, Y. V., & Luedman, R. (2008). Supercrowding: Weakly masking a target enhances crowding, Talk presentation at the Vision Sciences Society 8th Annual Meeting, Naples, Florida.
- Vickery, T. J., Shim, W. M., Chakravarthi, R., Jiang, Y. V., & Luedman, R. (2008). Breaking the bound: Weakly masking a target expands the range of crowding interaction, Talk presentation at the European Conference on Visual Perception 2008 Annual Meeting, Utrecht, Netherlands.
- Jiang, Y.V., Shim, W. M., & Makovski, T. (2007). The capacity limit of visual working memory, Talk presentation at the Psychonomic Society 48th Annual Meeting, Long Beach, California.
- Shim, W. M., Jiang, Y. V., & Kanwisher, N. (2007). Neural representation of multiple objects: Competitive interaction versus repetition attenuation, Talk presentation at the Society for Neuroscience 2007 Annual Meeting, San Diego, California.
- Vickery, T. J., Shim, W. M., Chakravarthi, R., Jiang, Y. V., & Luedman, R. (2007). Enclosing a target greatly increases maximum crowding distance, Poster presentation at the Society for Neuroscience 2007 Annual Meeting, San Diego, California.
- Vaziri Pashkam, M., Shim, W. M., & Jiang, Y. V. (2007). Human motion area MT is not spatiotopic, Talk presentation at the Society for Neuroscience 2007 Annual Meeting, San Diego, California.
- Shim, W. M., Alvarez, G. A., & Jiang, Y. V. (2007). Maintaining multiple attentional foci: spatial separation affects behavior but not posterior parietal activity, Talk presentation at the Vision Sciences Society 7th Annual Meeting, Sarasota, Florida.
- Jiang, Y. V. & Shim, W. M. (2006). Posterior parietal cortex dissociates two types of attentional load: attentional indexing and general effort, Talk presentation at the Psychonomic Society 47th Annual Meeting, Houston, Texas.
- Makovski, T., Shim, W. M., & Jiang, Y. V. (2006). Interference from filled delays on change detection, Poster presentation at the Psychonomic Society 47th Annual Meeting, Houston, Texas.

- Shim, W. M., Alvarez, G. A., Vickery, T. J., & Jiang, Y. V. (2006). Posterior parietal cortex dissociates two types of attentional load: attentional indexing and general effort, Talk presentation at the Society for Neuroscience 2006 Annual Meeting, Atlanta, Georgia.
- Shim, W. M., Alvarez, G. A., Vickery, T. J., & Jiang, Y. V. (2006). Effect of spatial and non-spatial attentional load on posterior parietal cortex, Poster presentation at the Vision Sciences Society 6th Annual Meeting, Sarasota, Florida.
- Matthew, C., Eng, H., Vickery, T. J., Shim, W. M., & Jiang, Y. V. (2006). Learning of arbitrary visual associations by trial-and-error, Poster presentation at the Vision Sciences Society 6th Annual Meeting, Sarasota, Florida.
- Shim, W. M., Alvarez, G. A., & Jiang, Y. V. (2005). Capacity limit of visual working memory in parietal cortex reflects capacity limit of spatial selection, Talk presentation at the Vision Sciences Society 5th Annual Meeting, Sarasota, Florida.
- King, L. -W., Shim, W., & Jiang, Y. V. (2005). Scene-based spatial context learning, Poster presentation at the Vision Sciences Society 5th Annual Meeting, Sarasota, Florida.
- Shim, W. M., & Cavanagh, P. (2004). Attention shift by apparent motion can cause position compression, Poster presentation at the Vision Sciences Society 4th Annual Meeting, Sarasota, Florida.
- Shim, W. M., & Cavanagh, P. (2003). Attentive tracking can modulate the illusory misalignment of a flash, Talk presentation at the Vision Sciences Society 3rd Annual Meeting, Sarasota, Florida.
- Shim, W. M., & Cavanagh, P. (2002). Illusory displacement of flash location depends on the perceived direction of bistable quartet motion, Talk presentation at the Vision Sciences Society 2nd Annual Meeting, Sarasota, Florida.
- Shim, W.-M., & Kim, M.-S. (2000). What constitutes context in contextual cueing effect? Presented at Annual meeting of the Korean Brain Science Society, Seoul, Korea.
- Shim, W.-M., & Kim, M.-S. (1999). Effects of selective attention on repetition priming for visual search elements, Presented at The 2nd International Conference on Cognitive Science, Tokyo, Japan.
- Shim, W.-M., & Kim, M.-S. (1999). Effects of selective attention and word identity processing on explicit and implicit memory, Presented at Summer workshop of the Korean Society of Experimental & Cognitive Psychology, Kyongsan, Korea.

Invited Talks

- *Feedback in vision*. KAIST, Korea. Nov 2016.
- *Feedback in vision*. Yonsei University, Korea. Sep 2016.
- *The role of feedback in visual processing*. Yale University. Sep 2015.
- *Top-down influences in visual cortex*. Florida Atlantic University, Center for Complex Systems and Brain Sciences. Boca Raton, USA. Nov 2013.
- *Top-down influences in visual cortex*. Sungkyunkwan University, Center for Neuroscience Imaging Research (CNIR), Institute for Basic Science (IBS), Korea. Aug 2013.
- *Top-down Processing in vision*. Yonsei University, Korea. Feb 2011.
- *Feedback processing in vision*. Korea University, Korea. Sep 2009.
- *Feedback Processing in vision*. Seoul National University, Korea. Sep 2009.
- *Capacity limits in vision*. Dartmouth College. Apr 2009.
- *Capacity limits in vision*. Brown University. Mar 2009.
- *Feedback processing in vision*. Harvard University. Dec 2008.
- *Capacity limits in visual attention and working memory*. Dartmouth College. Nov 2008.
- *Capacity limits in visual attention and working memory*. Harvard University. Oct 2008.
- *What sets the capacity limit of attention and working memory*. Yonsei University, Korea. Jul 2007.
- *The role of attention in position encoding*. Seoul National University, Korea. Aug 2006.

- *Effects of different types of attentional load on posterior parietal cortex*. MIT. May 2006.
- *The role of attention in position encoding*. MIT. May 2005.

Professional Activities

- 2017 Israel Science Foundation (ISF), grant reviewer
- 2012 Medical Research Council (UK), grant reviewer
- 2005- present Served as ad hoc reviewer for *Brain and Cognition*, *Cerebral Cortex*, *Current Biology*, *Frontiers in Human Neuroscience*, *Journal of Neuroscience*, *Journal of Vision*, *Journal of Experimental Psychology: Human Perception & Performance*, *Memory and Cognition*, *Nature Neuroscience*, *Neuron*, *Proceedings of the National Academy of Sciences*, *Psychological Research*, *Psychological Science*, *Psychonomic Bulletin & Review*, *Visual Cognition*
- 2006-present Post-doctoral and full member of the *Society for Neuroscience*
- 2000-present Student, post-doctoral, and full member of the *Vision Sciences Society*

Teaching

Dartmouth College, Hanover, NH, USA

- ♦ Psychology 11: *Laboratory in Psychological Science*. Fall 2010, Fall 2011, Spring 2013.
- ♦ Psychology 51: *Attention*. Spring 2010, Spring 2011, Spring 2012, Spring 2014, Spring 2015, Spring 2016.
- ♦ Psychology 60: *Brain Mapping with fMRI*. Fall 2011, Winter 2013, Winter 2015, Fall 2015.
- ♦ Psychology 85: *Top-down processing and plasticity in the brain*. Winter 2012, Fall 2013, Fall 2014, Winter 2016.

Academic Reference

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