

SEOYOUNG AHN
Curriculum Vitae

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Education and Training

B.A. Psychology, Russian Language and Literature, Seoul National University	2011 – 2016
M.A. Cognitive Science, Seoul National University Advisor: Sungryong Koh, Field of study: Psycholinguistics	2016 – 2018
Ph.D. Cognitive Science, State University of New York, Stony Brook Advisor: Gregory Zelinsky, Field of study: Visual Attention and Eye Movements	2018 – 2023
Postdoctoral Scientist, University of California, Berkeley/HHMI Advisor: Doris Tsao, Field of study: Visual Neuroscience	2024 – 2026

Post-training Positions

Assistant Professor of Social Science & AI, College of AI Convergence, Hankuk University of Foreign Studies (HUFS)	2026 – Current
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Honors

- APA Dissertation Research Award (2023), American Psychological Association (APA)
- FoVea Travel and Networking Award (2023), FoVea (Females of Vision, et al.)
- Distinguished Travel Award (2023), Stony Brook University
- Endowed Award for Cognitive Science (2023), Stony Brook University
- National Eye Institute Travel Award (2022), Vision Sciences Society
- Graduate Research Fellowship (2016-2018), Seoul National University
- Undergraduate Best Student Research Paper (2016), Seoul National University
- The Next Century Humanities Scholarship (2011-2015), Korean Student Aid Foundation

Professional Activities

- **Symposia Chaired** Annual Meeting of Vision Science Society "Using deep networks to re-imagine object-based attention and perception"(2024)
- **Workshop Committee/Contributors** Workshop on Eye Tracking in Learning and Education at (ETRA2022-2023), Workshop on All Things Attention: Bridging Different Perspectives on Attention at (Neurips2022), Workshop on Gaze Estimation and Prediction in the Wild (CVPR2022), Symposium on New Perspectives in Computational Modeling of Human Attention (CogSci2025)
- **Ad Hoc Reviewer** Nature Comms, Comms Biology, PLOS Computational Biology, Current Biology, Scientific Reports, PLOS One, Journal of Vision, Journal of Experimental Psychology: Human Perception and Performance, Memory & Cognition, AP&P (Attention, Perception, & Psychophysics), Investigative Ophthalmology & Visual Science (IOVS), Korean Journal of Cognitive Science, CVPR, ICCV, ECCV, Neurips, ACCV, WACV, BMVC, CCN, ETRA, IJCV, TPAMI, Expert Systems With Applications
- **Course Instructor** Research Methodology, Scientific Writing, NLP for Social Science, AI Safety and Reliability, Python Data Analysis, Survey in Cognition and Perception

Bibliography
([Link to Google Scholar](#))

1. **Ahn, S.**, Adeli, H., & Zelinsky, G. (Psych Science under revision). Guiding attention during search using generative target template matching. *PsyArXiv*. doi: 10.31234/osf.io/9bgdv_v1
2. **Ahn, S.**, Yang, Z., Mondal, S., Xue, R., Hoai, M., Samaras, D., & Zelinsky, G. (under review). Reward modeling of goal-directed gaze control. *PsyArXiv*. doi: 10.31234/osf.io/zt5hm_v1
3. Adeli, H., **Ahn, S.**, Luo, A., Zhang, M., Kriegeskorte, N., & Zelinsky, G. (2026). Human-like Object Grouping in Self-supervised Vision Transformers. *In European Conference on Computer Vision (ECCV)*
4. Raina, R., Leite, A., Graikos, A., **Ahn, S.**, Samaras, D., & Zelinsky, G. (2026). Generating metamers of human scene understanding. The Fourteenth International Conference on Learning Representations. <https://openreview.net/forum?id=cSDXx8V6K9>
5. Mondal, S., **Ahn, S.**, Yang, Z., Balasubramanian, N., Samaras, D., Zelinsky, G., & Hoai, M. (2024). Look Hear: Gaze Prediction for Speech-directed Human Attention. Target-absent human attention. *In European Conference on Computer Vision (ECCV)*, 236-255.
6. Yang, Z., Mondal, S., **Ahn, S.**, Xue, R., Zelinsky, G., Hoai, M., & Samaras, D. (2024). Unifying top-down and bottom-up scanpath prediction using Transformers. *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition (CVPR)*, 1683-1693.
7. **Ahn, S.**, Adeli, H., & Zelinsky, G. (2024). The attentive reconstruction of objects facilitates robust object recognition. *PLOS Computational Biology*, 20(6), e1012159.
8. Prasse, P., Reich, D. R., Makowski, S., **Ahn, S.**, Scheffer, T., & Jäger, L. A. (2023). SP-EyeGAN: Generating synthetic eye Movement data with Generative Adversarial Networks. *In Proceedings of the Symposium on Eye Tracking Research and Applications (ETRA)*, 1-9.
9. Adeli, H., **Ahn, S.**, & Zelinsky, G. J. (2023). A brain-inspired object-based attention network for multiobject recognition and visual reasoning. *Journal of Vision*, 23(5), 1-17.
10. Mondal, S., Yang, Z., **Ahn, S.**, Samaras, D., Zelinsky, G., & Hoai, M. (2023). Gazeformer: Scalable, effective and fast prediction of goal-directed human attention. *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 1441-1450.
11. Chakraborty, S., Wei, Z., Kelton, C., **Ahn, S.**, Balasubramanian, A., Zelinsky, G., & Samaras, D. (2023). Predicting visual attention in graphic design documents. *IEEE Transactions on Multimedia*, 25, 4478-4493
12. **Ahn, S.**, Adeli, H., & Zelinsky, G. (2022). Reconstruction-guided attention improves the robustness and shape processing of neural networks. *Advances in Neural Information Processing Systems Workshops (NeurIPS Workshops)*, 1-13.
13. Yang, Z., Mondal, S., **Ahn, S.**, Zelinsky, G., Hoai, M., & Samaras, D. (2022). Target-absent human attention. *In European Conference on Computer Vision (ECCV)*, 52-68.
14. Chen, Y., Yang, Z., Chakraborty, S., Mondal, S., **Ahn, S.**, Samaras, D., Hoai, M. & Zelinsky, G. (2022). Characterizing target-absent human attention. *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPR Workshops)*, 5031-5040.
15. **Ahn, S.**, Zelinsky, G. J., & Lupyán, G. (2021). Use of superordinate labels yields more robust and human-like visual representations in convolutional neural networks. *Journal of Vision*, 21(13), 1-19.
16. Chen, Y., Yang, Z., **Ahn, S.**, Samaras, D., Hoai, M., & Zelinsky, G. (2021). Coco-search18 fixation dataset for predicting goal-directed attention control. *Scientific reports*, 11(1), 8776.
17. Zelinsky, G., Chen, Y., **Ahn, S.**, Adeli, H., Yang, Z., Huang, L., Samaras, D., & Hoai, M. (2021). Predicting goal-directed attention control using inverse-reinforcement learning. *Neurons, behavior, data analysis and theory*, 5(2), 1-9
18. Zelinsky, G. J., Chen, Y., **Ahn, S.**, & Adeli, H. (2020). Changing perspectives on goal-directed attention control: The past, present, and future of modeling fixations during visual search. *In Psychology of learning and motivation* (Vol. 73, pp. 231-286). Academic Press.
19. **Ahn, S.**, Kelton, C., Balasubramanian, A., & Zelinsky, G. (2020). Towards predicting reading comprehension from gaze behavior. *In Proceedings of the ACM Symposium on Eye Tracking Research & Applications (ETRA)*, 32, 1-5.
20. Yang, Z., Huang, L., Chen, Y., Wei, Z., **Ahn, S.**, Zelinsky, G., Samaras, D., & Hoai, M. (2020). Predic-

ting goal-directed human attention using inverse reinforcement learning. *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 193-202.

21. Zelinsky, G., Yang, Z., Huang, L., Chen, Y., **Ahn, S.**, Wei, Z., Adeli, H., Samaras, D., & Hoai, M. (2019). Benchmarking gaze prediction for categorical visual search. *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPR Workshops)*, 1-9.
22. Kelton, C., Wei, Z., **Ahn, S.**, Balasubramanian, A., Das, S., Samaras, D., & Zelinsky G. (2019). Reading detection in real-time. *In Proceedings of the ACM Symposium on Eye Tracking Research & Applications (ETRA)*, 1-5.

Conference & Invited Talks

1. **Ahn, S.** & Zelinsky, G. (2025). *Active Object Generation as Attentional Guidance*. The 47th Annual Meeting of the Cognitive Science Society, San Francisco, CA, USA
2. **Ahn, S.** (2024). *Modeling active sampling of objects and scene using ANNs*. Herbert Wertheim School of Optometry & Vision Science, University of California, Berkeley, CA, USA
3. **Ahn, S.** (2024). *Modeling active sampling of objects and scene using ANNs*, Bay Area Vision Research Day (BAVRD), University of California, Berkeley, CA, USA
4. **Ahn, S.** (2023). *Generating object-based attention through reconstruction*. Center for Neuroscience Imaging Research (CNIR) Seminar. Sungkyunkwan University, Seoul, Republic of Korea.
5. **Ahn, S.** (2023). *Generating object-based attention through reconstruction*. Neuro Vision Lab Seminar. University of California, Berkeley, CA, USA.
6. **Ahn, S.** (2023). *Generating object-based attention through reconstruction*. Visual Inference Lab Seminar. Columbia University, NY, USA.
7. **Ahn, S.**, Adeli, H., & Zelinsky, G. (2024). *A Generative approach to understanding categorical visual search*. Computational and Mathematical Models in Vision (MODVIS), St. Pete Beach, FL, USA.
8. **Ahn, S.**, Adeli, H., & Zelinsky, G. (2023). *Reconstruction-guided attention improves object recognition robustness of neural networks*. Annual Meeting of Vision Science Society (VSS). St. Pete Beach, FL, USA.
9. **Ahn, S.**, Adeli, H., & Zelinsky, G. (2022). *Reconstruction-as-feedback serves as an effective attention mechanism for object recognition and grouping*. Computational and Mathematical Models in Vision (MODVIS), St. Pete Beach, FL, USA.
10. **Ahn, S.**, Adeli, H., & Zelinsky, G. (2022). *Reconstruction-as-feedback serves as an effective attention mechanism to increase recognition robustness*. From Neuroscience to Artificially Intelligent Systems (NAISys). Cold Spring Harbor Laboratory, NY, USA.
11. **Ahn, S.**, Zelinsky, G., & Lupyan, G. (2020). *Exploring the effects of linguistic labels on learned visual representations using convolutional neural networks*. Annual Meeting of Vision Science Society (VSS). St. Pete Beach, FL, USA.

Recent Conference Posters

1. **Ahn, S.**, Shi, Y. & Tsao, D.(2025). *Distinct neural codes for identity in intact and Mooney faces in IT face patches*, SfN Annual Meeting, San Diego, USA.
2. Raina, R., Leite, A., Graikos, A., **Ahn, S.**, & Zelinsky, G.(2025). *Seen2Scene: a generative model of fixation-by-fixation scene understanding*. Conference on Cognitive Computational Neuroscience (CCN). University of Amsterdam, Netherlands.
3. **Ahn, S.**, Adeli, H., & Zelinsky, G. (2024). *Are search templates target-object reconstructions*. Annual Meeting of Vision Science Society (VSS). St. Pete Beach, FL, USA.
4. Adeli, H., **Ahn, S.**, Kriegeskorte, N., & Zelinsky, G. (2023). *Self-supervised transformers predict dynamics of object-based attention in humans*. Conference on Cognitive Computational Neuroscience (CCN). Oxford, UK.
5. **Ahn, S.**, Mondal, S., Yang, Z., Samaras, D., Zelinsky, G., & Hoai, M. (2023). *RefCOCO-Gaze: A Large-Scale Gaze Dataset for an Object Referral Task*. Workshop on Natural Environments Tasks and Intelligence. Center for perceptual Systems, University of Texas at Austin, TX, USA.

Skills

Programming & Deep Learning: Python (PyTorch, TensorFlow, Keras), MATLAB, JavaScript, C#

Experimental Methods: Online behavioral data collection, Eye tracking

3D Modeling: Blender, Unity, Solidworks

Creative Writing: Scriptwriter for educational content at SNU Human Rights Center (2012–2014), the theater production *The Fourth Wall* (2013), and the animated film *Hair Universe* (SIGGRAPH Asia 2024 Jury Award)