SEOYOUNG AHN

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EDUCATION AND TRAINING

Ph.D. Cognitive Science *Sept. 2018 – present*
Stony Brook University, State University of New York
Advisor: Gregory Zelinsky, field of study: Vision, Attention

M.A. Psychology *Sept. 2016 – Aug. 2018*
Seoul National University
Advisor: Sungryong Koh, field of study: Psycholinguistics

B.A. Russian Language and Literature, B.A. Psychology *Mar. 2011 – Aug. 2016*
Seoul National University
Advisor: Eunji Song, Sowon Hahn

HONORS AND AWARDS

2023. Distinguished Travel Award, Graduate Student Organization, Stony Brook University
2023. Endowed Award Fund for Cognitive Science. Department of Psychology, Stony Brook University
2022. National Eye Institute Travel Grant. Vision Sciences Society
2017. Graduate Research Fellowship (2 yrs). Seoul National University
2016. Undergraduate Best Student Paper. College of Social Sciences, Seoul National University
2015. Undergraduate Research Grant. College of Social Sciences, Seoul National University
2011. The Next Century Humanities Scholarship (4 yrs). Korean Student Aid Foundation (KOSAF)

PEER-REVIEWED PUBLICATIONS

Ahn S, Adeli H, Zelinsky GJ. Reconstruction-guided attention improves the robustness and shape processing of neural networks. *Advances in Neural Information Processing Systems Wokshops (SVRHM at Neurips Workshops)*. 2022

Yang Z, Mondal S, **Ahn S**, Zelinsky G, Hoai M, Samaras D. Target-absent Human Attention. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (ECCV).* 2022

Chen Y, Yang Z, Chakraborty S, Mondal S, **Ahn S**, Samaras D, Hoai M, Zelinsky G. Characterizing Target-Absent Human Attention. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (ECCV Workshops).* 2022

Chakraborty S, Wei Z, Kelton C, **Ahn S**, Balasubramanian A, Zelinsky GJ, Samaras D. Predicting visual attention in graphic design documents. *IEEE Transactions on Multimedia*. 2022

Ahn S, Zelinsky GJ, Lupyan G. Use of superordinate labels yields more robust and human-like visual representations in convolutional neural networks. *Journal of vision*. 2021

Chen Y, Yang Z, **Ahn S**, Samaras D, Hoai M, Zelinsky G. COCO-Search18 fixation dataset for predicting goal-directed attention control. *Scientific reports*. 2021

Zelinsky G, Chen Y, **Ahn S**, Adeli H, Yang Z, Huang L, Samaras D, Hoai M. Predicting goal-directed attention control using inverse-reinforcement learning. *Neurons, behavior, data analysis and theory*. 2021

Ahn S, Kelton C, Balasubramanian A, Zelinsky G. Towards predicting reading comprehension from gaze behavior. *ACM Symposium on Eye Tracking Research and Applications (ETRA)*. 2020

Yang Z, Huang L, Chen Y, Wei Z, **Ahn S**, Zelinsky G, Samaras D, Hoai M. Predicting goal-directed human attention using inverse reinforcement learning. *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition (CVPR)*. 2020

Zelinsky G, Yang Z, Huang L, Chen Y, **Ahn S**, Wei Z, Adeli H, Samaras D, Hoai M. Benchmarking gaze prediction for categorical visual search. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPR Workshops*). 2019

Kelton C, Wei Z, **Ahn S**, Balasubramanian A, Das SR, Samaras D, Zelinsky G. Reading detection in real-time. *Proceedings of the 11th ACM Symposium on Eye Tracking Research & Applications (ETRA)*. 2019

NON-REFEREED PUBLICATIONS

Adeli H, **Ahn S**, Zelinsky G. A brain-inspired object-based attention network for multi-object recognition and visual reasoning. *bioRxiv*. 2022 [Under Review]

Adeli H, **Ahn S**, Zelinsky G. Recurrent attention models with object-centric capsule representation for multi-object recognition. *arXiv preprint arXiv:2110.04954*. 2021

Zelinsky GJ, Chen Y, **Ahn S**, Adeli H. Changing perspectives on goal-directed attention control: The past, present, and future of modeling fixations during visual search. *Psychology of Learning and Motivation*. 2020

TALKS AND POSTER PRESENTATIONS

Adeli H, **Ahn S**, Zelinsky G. Sequential object-based attention for robust visual reasoning. *Conference on Cognitive Computational Neuroscience (CCN)*. 2022 [poster]

Ahn S, Adeli H, Zelinsky G. Using object reconstruction as top-down attentional feedback yields a shape bias and robustness in object recognition. *Conference on Cognitive Computational Neuroscience (CCN)*. 2022 [poster]

Ahn S, Adeli H, Zelinsky G. Reconstruction-as-Feedback Serves as an Effective Attention Mechanism for Object Recognition and Grouping. *Computational and Mathematical Models in Vision (MODVIS)*. 2022 **[talk]**

Ahn S, Adeli H, Zelinsky G. Using Object Reconstruction as a Dynamic Attention Window to Improve Recognition Robustness. *Annual Meeting of Vision Science Society (VSS)*. 2022 [poster]

Adeli H, **Ahn S**, Zelinsky G. A brain-inspired object-based attention network for multi-object recognition and visual reasoning. *Annual Meeting of Vision Science Society (VSS)*. 2022 **[talk]**

Ahn S, Adeli H, Zelinsky G. Reconstruction-as-feedback serves as an effective attention mechanism to increase recognition robustness. *From Neuroscience to Artificially Intelligent Systems (NAISys)*. 2022 **[talk]**

Adeli H, **Ahn S**, Zelinsky G. A brain-inspired object-based attention network for multi-object recognition and visual reasoning. *From Neuroscience to Artificially Intelligent Systems (NAISys)*. 2022 **[talk]**

Ahn S, Zelinsky G, Lupyan G. Exploring the effects of linguistic labels on learned visual representations using convolutional neural networks. *Annual Meeting of Vision Science Society (VSS)*. 2020 **[talk]**

Ahn S, Zelinsky G. Predicting Mental States from Eye Movements During Reading. *Annual Meeting of Vision Science Society (VSS)*. 2019 [poster]

TEACHING EXPERIENCE

2020 Fall. Statistics. Lab Instructor, Stony Brook University
2020 Summer. Research and Writing. Instructor, Stony Brook University
2020 Spring. Research and Writing. Lab Instructor, Stony Brook University

ACADEMIC SERVICE

Program Committee Member: Eye Tracking in Learning and Education @ETRA22, @ETRA23; All Things Attention: Bridging Different Perspectives on Attention @Neurips22; Gaze Estimation and Prediction in the Wild @CVPR22
Organizer:Python for Data Science and Visualization @Stony Brook University GWISE (Graduate Women in Science and Engineering), 2022
Reviewer: Workshop on Mutual Benefits of Cognitive and Computer Vision @CVPR

SKILLS

Programming: Proficient in Python, MATLAB, R; Familiar with Java, HTML, C
Tools: PyTorch, TensorFlow, Git, Eyelink Eye-tracking Software, Psychopy
Language: Korean, English, Russian

REFERENCES

Dr. Gregory Zelinsky
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Dr. Sungryong Koh
Department of Psychology, Seoul National University
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