SEOYOUNG AHN

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EDUCATION AND TRAINING

PhD, Stony Brook University, State University of New York *Sept. 2018 – present*
Major in Psychology (Cognitive Science)
Advisor: Gregory Zelinsky

MA, Seoul National University *Sept. 2016 – Aug. 2018*
Major in Psychology (Psycholinguistics)
Advisor: Sungryong Koh

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

HONORS AND AWARDS

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

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

2022. Program Committee Member. Workshop on All Things Attention: Bridging Different Perspectives on Attention @Neurips
2022. Program Committee Member. Workshop on Gaze Estimation and Prediction in the Wild @CVPR
2022. Program Committee Member. Workshop on Eye Tracking in Learning and Education @ETRA
2022. Organizers. Workshop on Python Programming @Stony Brook University GWISE (Graduate Women in Science and Engineering)
2019. 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
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