

Hossein Adeli Jelodar
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[LinkedIn](#); [Google Scholar](#)

Positions

- Aug 2020 - **Senior Post-doctoral Research Fellow**
Cognitive Science, Department of Psychology, Stony Brook University
- Jan 2018 – Aug 2020 **Research/Data Scientist, Refinitiv Innovation Lab, Refinitiv (formerly Thomson Reuters Financial and Risk business), New York, NY**
Refinitiv lab works with different businesses within Refinitiv to identify product/growth opportunities enabled by AI and Machine learning. We build prototypes to test and validate our business hypotheses with customers.

Research Interests:

Attention Mechanism; Building Brain-inspired AI systems; Machine Learning; AI; Computational Modeling; Deep Learning; Visual Cognition; Computer Vision

Education

- 2017 **Ph.D. in Cognitive Science**, Stony Brook University, Stony Brook, NY
Advanced Graduate Certificate in Cognitive Neuroscience
Thesis title: *Deep Learning in Attention Networks*
Advisor: Gregory Zelinsky, Ph.D.
- 2014 **M.A. in Psychology**, Stony Brook University, Stony Brook, NY
Thesis title: *Explaining the Global Effect: A population model of saccade programming in the Superior Colliculus*
- 2012 **M.S. in Computer Science**, East Carolina University, Greenville, NC
Thesis title: *Modeling salient object-object interactions to generate textual descriptions for natural images*
Advisor: Nasseh Tabrizi, Ph.D.
- 2009-2010 **Graduate Coursework in Electrical Engineering**, Washington State University, Pullman, WA
- 2009 **B.S. in Electrical Engineering** (Control and System), Sharif University of Technology, Tehran, Iran
Thesis title: *Optimal decision making in dynamic environment under uncertainty*
Advisor: Nasser Sadati, Ph.D.

Publications ([Google Scholar Link](#)):

- Zelinsky, G. J., Chen, Y., Ahn, S., **Adeli, H.**, Yang, Z., Huang, L., ... & Hoai, M. (2021). Predicting goal-directed attention control using inverse-reinforcement learning. *Neurons, behavior, data analysis and theory*, 2021.
- 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. *Psychology of Learning and Motivation*, 73, 231-286.

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- Zelinsky, G., Yang, Z., Huang, L., Chen, Y., Ahn, S., Wei, Z., **Adeli, H.**, ... & Hoai, M. (2019). Benchmarking gaze prediction for categorical visual search. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops* (pp. 0-0).
- Adeli, H.**, & Zelinsky, G. (2018). Learning to attend in a brain-inspired deep neural network. *arXiv preprint arXiv:1811.09699*.
- Adeli, H.**, & Zelinsky, G. (2018). Deep-BCN: Deep Networks Meet Biased Competition to Create a Brain-Inspired Model of Attention Control. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops* (pp. 1932-1942).
- Adeli, H.**, Vitu, F., Zelinsky, G. J. (2017). A model of the superior colliculus predicts fixation locations during scene viewing and visual search. *J of Neuroscience*, 37(6), 1453-1467.
- Vitu, F., Casteau, S., **Adeli, H.**, Zelinsky, G. J., Castet, E. (2017). The magnification factor accounts for the greater hypometria and imprecision of larger saccades: Evidence from a parametric human-behavioral study. *Journal of Vision*, 17(4):2, 1–38.
- Wei*, Z., **Adeli***, H., Zelinsky, G., Samaras, D., Hoai, M. (2016). Learned region sparsity and diversity also predicts visual attention. In *Neural Information Processing Systems (NIPS)* (pp. 1894-1902).
*Equal Contribution
- Adeli, H.**, Yadranjiaghdam, B., Pool, N., Tabrizi, N. (2016, December). Modelling Salient Object-Object Interactions to Generate Textual Descriptions for Natural Images. In *2016 International Conference on Computational Science and Computational Intelligence (CSCI)*, (pp. 1220-1225). IEEE.
- Zelinsky, G., **Adeli, H.**, Peng, Y., Samaras, D. (2013). Modelling eye movements in a categorical search task. *Phil. Trans. R. Soc. B*, 368(1628), 20130058.
- Darabi, M., **Adeli, H.**, Tabrizi, N. (2012). Automatic multi-label categorization of news feeds. In *Proceedings of the International Conference on Data Mining (DMIN)* (p. 1).
- Adeli, H.**, Tabrizi, M. H. N., Mazloomian, A., Hajipour, E., Jahed, M. (2011). Path planning for mobile robots using iterative artificial potential field method. *IJCSI International Journal of Computer Science Issues*, 8(4).
- Sadati, N., Kaboli, S., **Adeli, H.**, Hajipour, E., Ferdowsi, M. (2009). Online optimal neuro-fuzzy flux controller for dtc based induction motor drives. In *Applied Power Electronics Conference and Exposition (APEC), 2009* (pp. 210-215). IEEE.

Conference Presentations (Oral)

- Zelinsky, G., **Adeli, H.**, Emergence of visuospatial attention in a brain-inspired deep neural network, Vision Sciences Society Meeting (VSS) 2018, FL USA
- Vitu, F., **Adeli, H.**, Zelinsky, G., How MASC, a Model of Attention in the Superior Colliculus, pretends to read despite being completely illiterate! European Conference on Eye Movements (ECEM) 2017, Wuppertal Germany
- Wei, Z., **Adeli, H.**, Zelinsky, G., Samaras, D., Hoai, M. Predicting Scanpath Agreement during Scene Viewing using Deep Neural Networks, Vision Sciences Society Meeting (VSS) 2017, FL USA
- Adeli, H.**, Zelinsky, G., A Computational Biased Competition Model of Visual Attention using Deep Neural Networks, Vision Sciences Society Meeting (VSS) 2016, FL USA

Vitu, F., **Adeli, H.**, Zelinsky, G., Reading without a lexicon: An illiterate model of saccade programming in the superior colliculus predicts where readers move their eyes!, Vision Sciences Society Meeting (VSS) 2016, FL

Zelinsky, G., **Adeli, H.**, Vitu, F., Modeling attention and saccade programming in real-world contexts. European Conference on Visual Perception (ECVP) 2016, Barcelona Spain

Cooper, B., **Adeli, H.**, Zelinsky, G., McPeck, R., Macaque monkey use of categorical target templates to search for real-world objects. European Conference on Visual Perception (ECVP) 2016, Barcelona Spain

Adeli, H., Zelinsky, G., Vitu, F., A model of saccade programming during scene viewing based on population averaging in the superior colliculus. Vision Sciences Society Meeting (VSS) 2015, FL USA

Darabi, M., **Adeli, H.**, Tabrizi, N. Automatic Multi-label Categorization of News Feeds. International Conference on Data Mining (DMIN), 2012, NV USA

Conference Presentations (Poster)

Adeli, H., & Zelinsky, G., Learning to attend in a brain-inspired deep neural network. Cognitive Computational Neuroscience (CCN) 2018, PA, USA

Cooper, B., **Adeli, H.**, Zelinsky, G., McPeck, R., Activity of visually-responsive superior colliculus neurons in the visual search task using naturalistic object categories. Society for Neuroscience Meeting (SFN) 2017, DC USA

Cooper, B., **Adeli, H.**, Zelinsky, G., McPeck, R., Macaque monkey use of categorical target templates to search for real-world objects. Society for Neuroscience Meeting (SFN) 2016, CA USA

Zelinsky, G. J., **Adeli, H.**, Vitu, F., The new best model of visual search can be found in the brain, Vision Sciences Society Meeting (VSS) 2016, FL USA

Adeli, H., Casteau, S., Vitu, F., Zelinsky, G., An image-based population model of human saccade programming in the Superior Colliculus, Vision Sciences Society Meeting (VSS) 2014, FL USA

Zelinsky, G. J., **Adeli, H.**, Does an interaction catch the eye? Decoding eye movements to predict scene understanding, Vision Sciences Society Meeting (VSS) 2014, FL USA

Zelinsky, G. J., **Adeli, H.**, Decoding eye movements to predict social interaction in real-world scenes, European Conference on Visual Perception (ECVP) 2014, Belgrade Serbia

Yun, K., Peng, Y., **Adeli, H.**, Berg, T., Samaras, D., & Zelinsky, G., Specifying the Relationships Between Objects, Gaze, and Descriptions for Scene Understanding, Vision Sciences Society Meeting (VSS) 2013, FL USA

Teaching Experience

Instructor

Fall 2017	Research Methods and Writing in Psychology (Undergraduate recitation), Stony Brook University
Summer 2016	Sensation and Perception (Undergraduate), Stony Brook University
Fall 2013	Research Methods and Writing in Psychology (Undergraduate recitation), Stony Brook University

Guest Lecturer

Fall 2017	Sensation and Perception (Undergraduate), Stony Brook University
Spring 2017	Survey in Cognition and Perception (Undergraduate), Stony Brook University
Fall 2016	Theories of Attention (Graduate), Stony Brook University
Fall 2015	Sensation and Perception (Undergraduate), Stony Brook University

Teaching Assistant

Spring 2017	Survey in Cognition and Perception (Undergraduate), Stony Brook University
Fall 2014	Sensation and Perception (Undergraduate), Stony Brook University
Spring 2010	Numerical Computations using MATLAB (Undergraduate), Washington State University
Fall 2009	Linear Control Systems (Undergraduate), Washington State University

Awards

2012-2017	Graduate Tuition Scholarship, Stony Brook University, NY
2012	Outstanding Graduate Student Award, East Carolina University, NC
2010-2012	Graduate Scholar Award, East Carolina University, NC
2003	Gold Medalist in 13th National Chemistry Olympiad, Tehran, Iran

Review Experience

Ad-hoc reviewer	Journal of Vision Philosophical Transaction of the Royal Society B: Biological Sciences Neural Information Processing Systems Attention Perception & Psychophysics
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Professional Affiliations & Organizations

Since 2016	Society for Neuroscience (SFN)
Since 2015	American Associations for Advancement of Science (AAAS)
Since 2014	New York Academy of Science (NYAS)
Since 2012	Vision Sciences Society (VSS)