Curriculum Vitae

Preeti Verghese, Ph.D.
Smith-Kettlewell Eye Research Institute
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San Francisco, CA 94115

Education:	Degree	Year	Field of Study
Indian Institute of Technology,	B. Tech.	1984	Electrical Engineering
Syracuse University	Ph.D.	1990	Neuroscience

Honors & Awards

1979	National Merit Scholarship, India
1984-1986	Syracuse University Graduate Fellowship
1993-1996	National Research Council Associate
1999	*Presidential Early Career Award for Scientists and Engineers*
2016-2017	President, Vision Sciences Society

Professional Experience

1990-1993	Postdoctoral Fellow, Department of Psychology, Harvard University
1993-1996	National Research Council Fellow, NASA Ames Research Center
1996-2000	Associate Scientist, The Smith-Kettlewell Eye Research Institute, San Francisco
2001-2013	Scientist, The Smith-Kettlewell Eye Research Institute, San Francisco
2013-present	Senior Scientist, The Smith-Kettlewell Eye Research Institute, San Francisco

Professional Service

1991-present	Ad hoc reviewer for NIMH, NEI, NSF, *Journal of Vision*, *Neuron*, *Nature Neuroscience*, *Vision Research*, *Journal of Neuroscience*, *PLOS Biology*, *PLOS Computational Biology*, *PLOS One*, *Investigative Ophthalmology and Vision Science*, *Attention*, *Perception & Psychophysics*, *Perception*, *Journal of Experimental Psychology: Human Perception and Performance*, etc.
2002, 2004	Instructor, Computational Neuroscience, Cold Spring Harbor, NY
2003, 2007	Organizing Committee, International Workshop on Visual Attention
2007	Member, NSF Review Panel, Perception Action and Cognition
2007-present	Member, Editorial Board, *Vision Research*
2008-present	Member, Review Committee, *Vision Sciences Society*
2011	Chair, 3rd International Workshop on Visual Attention
2013- present	Member, Editorial Board, *Journal of Vision*
2013	Chair, Young Investigator Award Committee*, Vision Sciences Society*
2013-2018	Board Member*, Vision Sciences Society*
2018- 2024	*Regular Member, NIH Study Section on Mechanisms of Sensory, Perceptual and Cognitive Processes (SPC)*

Membership

Vision Sciences Society
Association for Research in Vision and Ophthalmology
Society for Neuroscience

Peer-reviewed Publications

Verghese P, Pelli DG. (1992) The information capacity of visual attention. *Vision Research* **32**: 983-95.

Verghese P, Pelli DG. (1994) Scale bandwidth of visual search. *Vision Research* **34**: 955-62.

Verghese P, Nakayama K. (1994) Stimulus discriminability in visual search. *Vision Research* **34**: 2453-67.

Verghese P, Stone LS. (1995) Combining speed information across space. *Vision Research* **35**: 2811-23.

Verghese P, Stone LS. (1996) Many are better than more: early segmentation affects speed perception. *Nature* **381**: 161-3.

Verghese P, Stone LS. (1997) The effect of spatial layout on speed perception. *Vision Research* **37**: 397-406.

Verghese P, Watamaniuk SNJ, McKee SP, Gryzwacz NM. (1999) Local motion detectors cannot account for the detectability of an extended trajectory in noise. *Vision Research* **39**: 19-30.

Palmer J, **Verghese P**, Pavel M. (2000) The psychophysics of visual search. *Vision Research* **40:** 1227-68.

Verghese P, McKee SP, Gryzwacz NM. (2000) Stimulus configuration determines the detectability of motion signals in noise. *Journal of the Optical Society of America,* **17**: 1525-34.

Verghese P. (2001) Visual search and attention: a signal detection theory approach. *Neuron **31***: 523-35.

McKee SP, **Verghese P**. (2002) Stereo transparency and the disparity gradient limit. *Vis. Res.* **42**: 1963-77.

Vreven D, **Verghese P**. (2002) Integration of speed signals in the direction of motion. *Perception & Psychophysics* **64**: 996-1007.

Vreven D, McKee SP, **Verghese P**. (2002) Contour completion through depth interferes with stereoacuity. *Vision Research* **42**: 2153-62.

Kontsevich L, Chen C-C, **Verghese P**, Tyler CW. (2002) The unique criterion approach fails to identify internal noise: a response to Gorea & Sagi (2001) *Nature Neuroscience* **5**: 707-8.

Verghese P, McKee SP. (2002) Predicting future motion. *Journal of Vision* **2**(5): 413-23. http://journalofvision.org/2/5/5/

Baldassi S, **Verghese P.** (2002) Comparing integration rules in visual search. *Journal of Vision* **2**(8): 559-70. http://journalofvision.org/2/8/3/

Verghese P, McKee SP. (2004) Visual search in clutter. *Vision Research* **44**, 1217-25.

McKee SP, **Verghese P**, Farrell B. (2004) What is the depth of a sinusoidal grating? *Journal of Vision* **4**(7): 524-38. http://journalofvision.org/4/7/1/

Baldassi S, Burr D, Carrasco M, Eckstein M, **Verghese P**. (2004). Visual attention. *Vision Research* **44**: 1189-91.

Vreven D, **Verghese P**. (2005) Predictability and the dynamics of position processing in the flash-lag effect. *Perception* **34**: 31-44.

Renninger LW, Coughlan JM, **Verghese P,** Malik J. (2005) An information maximization model of eye movements. *Advances in Neural Information Processing Systems* **17**: 1121-8.

Baldassi S, **Verghese P**. (2005) Attention to locations and features: different top-down modulation of detector weights. *Journal of Vision* **5**(6): 556-70. http://journalofvision.org/5/6/7/

McKee SP, **Verghese P**, Farrell B. (2005). Stereo sensitivity depends on stereo matching, *Journal of Vision*, **5**(10): 783-92. http://journalofvision.org/5/10/3/

Verghese P, McKee SP. (2006) Motion grouping impairs speed discrimination. *Vision Research* **46**: 1540-6.

Petrov Y, **Verghese P**, McKee SP (2006). Collinear facilitation is largely uncertainty reduction. Journal of Vision, **6**(2): 170-8. http://journalofvision.org/6/2/8/

Renninger LW, **Verghese P**, Coughlan JM. (2007) Where to look next: Eye movements reduce local uncertainty. *Journal of Vision* **7**(3): 6, 1-17. http://journalofvision.org/7/3/6/

McKee SP, **Verghese P**, Ma-Wyatt A, Petrov Y. (2007) The wallpaper illusion explained. *Journal of Vision* **7**(14): 10. http://www.journalofvision.org/7/14/10

Burr DC, Baldassi S, Morrone MC, **Verghese P**. (2009). Pooling and segmenting motion signals. *Vision Research* **49**: 1065-72.

Carrasco M, Eckstein M, **Verghese P**, Boynton G, Treue S. (2009). Visual attention: Neurophysiology, psychophysics and cognitive neuroscience. *Vision Research* **49**: 1033-6.

Verghese P. (2009) Contours in noise: a role for self-cuing?. *Journal of Vision* 9(13): 2.1-16.

Freeman E, **Verghese P**. (2009). Peeling plaids apart: context counteracts cross-orientation contrast masking. *PLoS One*. Dec 2;4(12):e8123.

Verghese P (2012). Active search for multiple targets is inefficient. *Vision Research* 74:61-71.

Kim YJ, **Verghese** P (2012). The selectivity of task-dependent attention varies with surrounding context. *Journal of Neuroscience* **32**: 12180-91

Verghese P, Kim YJ, Wade AR. (2012). Attention selects informative neural populations in human V1. *Journal of Neuroscience* **32**: 16379-90.

Janssen CP, **Verghese P** (2015). Stop before you saccade: looking into a peripheral artificial scotoma. *Journal of Vision* 2015; 15(5): 7.

Kim YJ, **Verghese P**. (2014). The influence of segmentation and uncertainty on target selection. *Journal of Vision* 2014 Mar 5; 14(3):3.

Ghahghaei S, **Verghese P**. (2015). Efficient saccade planning requires time and clear choices. *Vision Research* 2015 Aug; 113 (Part B):125-36..

Verghese P, Maloney LT, Landy MS. (2015). The efficiency of vision and action. *Vision Research* 2015 Aug; 113(Part B) 113-5.

Verghese P, Tyson T, Ghahghaei S. Fletcher DC (2016). Depth perception and grasp in age-related macular degeneration. *Investigative Ophthalmology & Visual Science,* 57(3): 1476-87.

Shanidze N, Fusco G, Potapchuk E, Heinen SJ, **Verghese P.** (2016). Smooth pursuit eye movements in patients with macular degeneration. *Journal of Vision* 16(3):1. doi: 10.1167/16.3.1

Janssen CP, **Verghese P**. (2016). Training eye movements for visual search in individuals with macular degeneration. *Journal of Vision* 2016 Dec 1; 16(15):29.

Hou C, Kim YJ, Lai XJ, **Verghese P** (2016). Degraded attentional modulation of cortical neural populations in strabismic amblyopia. *Journal of Vision*, 16(3): 16.

Shanidze N, Ghahghaei S, **Verghese P**. (2016) Accuracy of eye position for saccades and for smooth pursuit. *Journal of Vision* 2016 Dec 1; 16(15):23.

Hou C, Kim YJ, **Verghese P.** (2017) Cortical sources of Vernier acuity in the human visual system: an EEG-source imaging study. *Journal of Vision* 2017 Jun 1; 17(6): 2.

Kim YJ, Tsai JJ, Ojemann J, **Verghese P.** (2017) Attention to multiple objects facilitates their integration in prefrontal and parietal cortex. *Journal of Neuroscience* 2017 May 10; 37(19).

Ghahghaei S, **Verghese P.** (2017) Texture segmentation influences the spatial profile of presaccadic attention. *Journal of Vision* 2017 Feb 1; 17(2):10. doi: 10.1167/17.2.10.

Shanidze N, Heinen S, **Verghese P.** (2017) Monocular and binocular smooth pursuit in central field loss. *Vision Research* 2017 Jan 9. pii: S0042-6989(16)30207-3.

Verghese P, McKee SP, Levi DM (2019). Attention deficits in amblyopia. *Current Opinion in Psychology*. doi:10.1016/j.copsyc.2019.03.011.

Stewart E**, Verghese P,** Ma-Wyatt A. (2019). The spatial and temporal properties of attention selectivity for saccades and reaches *Journal of Vision*, *19(9):12.*

Ghahghaei S, McKee SP, **Verghese P.** (2019). The upper disparity limit increases gradually with eccentricity. *Journal of Vision*, *19* (11):3.

Shanidze N, **Verghese P**. (2019). Motion perception in central field loss. *Journal of Vision*, 19(14):20.

Hou C, Nicholas SC, **Verghese P**. (2020). Contrast normalization account for binocular interactions in human striate and extra-striate cortex. J Neurosci. doi: 10.1523/JNEUROSCI.2043-19

Book Chapters

Verghese P, Beutter BR. (2002) Motion processing: a review. In: *Encyclopedia of the Human Brain*. Ramachandran VS (ed.) Academic Press, 117-35.

Verghese P. (2007). Cueing search in clutter. In: *Computational Vision in Neural and Machine Systems*, Harris L, Jenkin M (eds.), Cambridge University Press.

Funding

NIH R01EY027390-01 *Verghese* (PI) 04/1/17 – 03/31/21
Title: "Maximizing visual potential in age-related macular degeneration"

NIH R01EY025018-01A1 *Hou* (PI) 01/01/16 – 12/31/20
Title: "Interocular Suppression and Selective Attention in Amblyopia"
Role: Co-Investigator

NIH 5T32EY025201 *Verghese* (PI) 04/01/16-03/31/20
Title: "Postdoctoral Training in Vision Research"

NIH 1R01EY022394-01 *Verghese* (PI) 05/01/12 – 04/30/16
Title: "Recovery of Stereopsis in Age-Related Macular Degeneration"

Pacific Vision Foundation 09007101 *Verghese* (PI) 09/15/13 – 12/31/16

Title: “Testing a Novel Method for Teaching Scotoma Awareness”

NSF BCS-0963914 *Verghese* (PI) 06/01/10 – 08/31/14
Title: “Neural Correlates of Target Selection”

NIH 1 R01 EY022156-01 *Renninger* (PI) 12/01/12 – 11/30/15.
Title: “Reaching with Central Field Loss”
Role: Co-Investigator

NSF BCS 064728 *Verghese* (PI) 01/04/07 – 31/03/10
Title: “Accumulating evidence for smooth paths”

NIH R01 EY018004-01 *Renninger* (PI) 09/01/06-07/31/10
CRCNS: Where to Look Next? Modeling Eye Movements in Normal and Impaired Vision
Role: Co-Investigator

AFOSR FA9550-05-1-0151 *Verghese* (PI) 04/01/05 – 03/31/08
Title: “A Model for Visual Decision Making under Time Pressure”

Pacific Vision Foundation *Verghese* (PI) 01/01/06 – 5/31/08
Title: “Optimal Eye Movement Strategies for AMD Rehabilitation”

NASA NAG9-1461 *Verghese* (PI) 09/23/02 – 09/23/05
Title: “Processing Motion Signals in Complex Environments—Phase II”

NSF BCS-0347051 *Verghese* (PI) 08/01/04 – 07/31/07
Title: “The Role of Self-Cueing in Visual Organization”

NIH 5 R01 EY006644 *McKee* (PI) 04/01/04 – 12/31/07
Title: “Stereoacuity and Binocular Correspondence”
Role: Co-investigator

NIH R01 EY12038 *Verghese* (PI) 05/01/99 – 04/30/03
Title: “Visual Organization--Beyond Local Mechanisms”

NASA NAG9-1163 *Verghese* (PI) 09/23/99 – 09/22/02
Title: “Processing Motion Signals in Complex Environments”

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