

# HyungGoo R. Kim

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## Education

Aug 2008-Aug 2013 Ph.D., Brain and Cognitive Sciences, University of Rochester, USA  
Mar 2005-Aug 2007 M.S., Neuroscience Program, Seoul National University, Seoul, Korea  
Mar 1998-Feb 2005 B.S., Computer Science and Engineering, Seoul National University, Seoul, Korea

## Peer-reviewed Publications

Kim HR, Angelaki DE, DeAngelis GC (2017) Gain Modulation as a Mechanism for Coding Depth from Motion Parallax in Macaque Area MT, *Journal of Neuroscience*.

Kim HR, Pitkow X, Angelaki DE, DeAngelis GC (2016) A simple approach to ignoring irrelevant variables by population decoding based on multisensory neurons, *Journal of Neurophysiology* 116 (3), 1449-1467

Kim HR, Angelaki DE, DeAngelis GC (2016) The neural basis of depth perception from motion parallax. *Philosophical Transactions of the Royal Society B: Biological Sciences* 371 (1697) [Review article]

Kim HR, Angelaki DE, DeAngelis GC (2015) A novel role for visual perspective cues in the neural computation of depth. *Nature Neuroscience* 18(1), 129-137.

Kim HR, Angelaki DE, DeAngelis GC (2015) A Functional Link between MT Neurons and Depth Perception Based on Motion Parallax. *The Journal of Neuroscience* 35 (6), 2766-2777

Nadler JW, Barbash D, Kim HR, Shimpi S, Angelaki DE, DeAngelis GC (2013) Joint Representation of Depth from Motion Parallax and Binocular Disparity Cues in Macaque Area MT. *The Journal of Neuroscience* 33:1406114074.

Kim T, Kim HR, Kim K, Lee C (2012) Modulation of V1 Spike Response by Temporal Interval of Spatiotemporal Stimulus Sequence. *PLoS ONE* 7(10):e47543. doi:10.1371/journal.pone.0047543

Lee J, Kim HR, Lee C (2010) Trial-to-trial variability of spike response of V1 and saccadic response time. *J Neurophysiol* 104: 2556-2572; doi:10.1152/jn.01040.2009

## Papers in Preparation

Kim HR, Angelaki DE, DeAngelis GC, Neural correlates of detecting moving objects during self-motion.

Kim HR, Naoshige Uchida, Phasic Whisking-related dopamine activity response in the dorsolateral striatum correlates with specific movements.

Kim HR, Naoshige Uchida, A derivative-like computation underlies dopamine ramping based on dynamic sensory stimuli.

## Honors and Awards

2018 Meselson Prize for the Most Beautiful Experiment, Dept. of Molecular and Cellular Biology, Harvard University  
1999-05 Undergraduate Scholarship, Korea Foundation for Advanced Studies

## Talks and Seminars

A derivative-like computations underlie dopamine prediction error coding based on dynamic sensory stimuli, SfN 2018 Nanosymposium 109.09

Constructing a three-dimensional world during self-motion: Neural mechanisms of depth perception and moving object detection in macaque monkeys, Neurolunch seminar, Center for brain science, Apr 8th, 2014

Dynamic perspective as a proxy for smooth pursuit in coding depth sign from Motion parallax in area MT, OSA Vision Meeting 2012 Contributed vision session

Estimation of heading in the presence of moving objects : A functional role for 'opposite' cells in area MSTd?, SfN 2010 Nanosymposium 731.2

## Conference Posters

Kim HR, Uchida N, Phasic Whisking-related dopamine activity response in the dorsolateral striatum correlates with specific movements, SfN 2017

Kim HR, Angelaki DE, DeAngelis GC, Detecting moving objects based on cue conflict between disparity and motion parallax: Behavior and physiology, SfN 2014

Kim HR, Angelaki DE, DeAngelis GC, Gain modulation by eye movements as a mechanism for representing depth from motion parallax in area MT, SfN 2013

Kim HR, Angelaki DE, DeAngelis GC, Dynamic perspective cues can substitute for smooth pursuit in coding depth sign from motion parallax in area MT, SfN 2012

Kim HR, Angelaki DE, DeAngelis GC, Neural correlates of depth perception from motion parallax in macaque area MT, SfN 2011

H. Kim, J. Lee, C. Lee, Information of saccade direction in postsaccadic discharge in the primate V1 neurons, SfN 2007

J. Lee, H. Kim, C. Lee, Roles of neural activity in the monkey V1 for saccadic response time variability, SfN 2007

T. Kim, H. Kim, C. Lee, Response selectivity of V1 neurons for spatiotemporal sequence of stimulus orientation, SfN 2007

## Professional Experience

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| Sep 2014-present  | Postdoctoral Fellow, Naoshige Uchida Lab, Harvard University.   |
| Sep 2013-Aug 2014 | Postdoctoral Associate, Gregory DeAngelis Lab, University of Rochester.   |
| Aug 2001-Aug 2004 | Software developer, Korea WISENut<br>made document crawler, indexer, and storage system for search engine (Win32/Unix, C++).                              |
| Jul 1999-Mar 2001 | Part-time security service engineer, SNAGs computer security group<br>recovered cracked computers and instructed system administrators in the university. |

## Teaching and Mentoring

- Teaching Assistant in Sensory and Motor Neuroscience course, Brain and Cognitive Sciences, Univ. of Rochester
- Monitored one rotation graduate student (06/2016-09/2016), one undergraduate student (12/2017-present), and one new postdoc (7/2018 - present) in Uchida Lab, Harvard University

## Memberships, Skills and Qualifications

- Society for Neuroscience
- Fluent in MATLAB, C/C++