

CV – Reza Rajimehr

McGovern Institute for Brain Research
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Education:

M.D., 1996 - 2004
School of Medicine
Iran University of Medical Sciences and Health Services (IUMS)
Tehran, Iran

M.D. thesis: Psychophysical investigation of visual awareness

Research Experience:

Research Scientist, 2015 - present
McGovern Institute for Brain Research
Massachusetts Institute of Technology (MIT)
Cambridge, MA

Postdoctoral Associate, 2009 - 2014
McGovern Institute for Brain Research
Massachusetts Institute of Technology (MIT)
Cambridge, MA
Advisor: Robert Desimone

Postdoctoral Research Fellow, 2005 - 2008
NMR Martinos Center
Massachusetts General Hospital (MGH)
Harvard Medical School
Charlestown, MA
Advisor: Roger Tootell

Researcher, 2001 - 2004
School of Cognitive Sciences (SCS)
Institute for Studies in Theoretical Physics and Mathematics (IPM)
Tehran, Iran
Advisor: Hossein Esteky

Research Interests:

- Functional organization of visual cortex in humans and monkeys
- Object recognition, face and scene perception
- Visual attention, consciousness

Laboratory and Computer Skills:

- Human fMRI, Monkey fMRI, Visual psychophysics, Monkey electrophysiology, Optogenetics
- Matlab, PsychToolbox, C, Delphi, Unix bash/csh scripting, FreeSurfer, FS-FAST, Caret, Connectome Workbench, Cortex, SPSS

Memberships:

- Society for Neuroscience (SfN)
- Vision Sciences Society (VSS)

Ad Hoc Reviewer:

- Basic and Clinical Neuroscience
- Behavioural Brain Research
- Brain Structure and Function
- Cerebral Cortex
- Frontiers in Behavioral Neuroscience
- Human Brain Mapping
- Journal of Vision
- Nature Neuroscience
- NeuroImage
- PLoS One

Organizer of Workshop/Symposium:

- Workshop, fMRI data analysis, IPM, 2016
- Workshop, fMRI data analysis, IPM, 2015
- Workshop, Computational mechanisms of object recognition in the ventral visual pathway, Cosyne, 2015
- Symposium, What does fMRI tell us about brain homologies?, VSS, 2012

Publications:

- 1) Rajimehr R, Kornblith S, Tsao DY, Desimone R. Functional parcellation of visual cortex in humans and monkeys. Submitted.

- 2) Yargholi E, Hossein-Zadeh GA, Rajimehr R. Predicting BOLD activity in FFA from the activity in other visual areas. Submitted.
- 3) Abbasi N, Mohajer B, Abbasi S, Hasanabadi P, Abdolalizadeh A, Rajimehr R. Relationship between CSF biomarkers and structural brain network properties in Parkinson's disease. Submitted.
- 4) Emadi N, Rajimehr R, Esteky H. High baseline activity in inferior temporal cortex improves neural and behavioral discriminability during visual categorization. *Front Syst Neurosci.* 8: 218 (2014).
- 5) Rajimehr R, Nasr S, Tootell R. Deconstructing Scene Selectivity in Visual Cortex. In: 'Scene Vision: Making Sense of What We See' (Kveraga K and Bar M, Eds.). MIT Press, Cambridge, MA, pp. 73-84 (2014).
- 6) Rajimehr R, Bilenko NY, Vanduffel W, Tootell RB. Retinotopy versus face selectivity in macaque visual cortex. *J Cogn Neurosci.* 26: 2691-700 (2014).
- 7) Nasr S, Liu N, Devaney KJ, Yue X, Rajimehr R, Ungerleider LG, Tootell RB. Scene-selective cortical regions in human and nonhuman primates. *J Neurosci.* 31: 13771-85 (2011).
- 8) Han X, Chow BY, Zhou H, Klapoetke NC, Chuong A, Rajimehr R, Yang A, Baratta MV, Winkle J, Desimone R, Boyden ES. A high-light sensitivity optical neural silencer: development and application to optogenetic control of non-human primate cortex. *Front Syst Neurosci.* 5: 18 (2011).
- 9) Rajimehr R, Devaney KJ, Bilenko NY, Young JC, Tootell RB. The "parahippocampal place area" responds preferentially to high spatial frequencies in humans and monkeys. *PLoS Biol.* 9: e1000608 (2011).
- 10) Rajimehr R, Tootell RB. Does retinotopy influence cortical folding in primate visual cortex? *J Neurosci.* 29: 11149-52 (2009).
- 11) Rajimehr R, Young JC, Tootell RB. An anterior temporal face patch in human cortex, predicted by macaque maps. *Proc Natl Acad Sci USA.* 106: 1995-2000 (2009).
- 12) Tootell RB, Devaney KJ, Young JC, Postelnicu G, Rajimehr R, Ungerleider LG. fMRI mapping of a morphed continuum of 3D shapes within inferior temporal cortex. *Proc Natl Acad Sci USA.* 105: 3605-9 (2008).
- 13) Rajimehr R, Tootell RB. Organization of Human Visual Cortex. In: 'The Senses: A Comprehensive Reference' (Vol. 1: Vision I). Elsevier, Oxford, UK, pp. 595-614 (2007).

- 14) Sasaki Y, Rajimehr R, Kim BW, Ekstrom LB, Vanduffel W, Tootell RB. The radial bias: a different slant on visual orientation sensitivity in human and nonhuman primates. *Neuron*. 51: 661-70 (2006).
- 15) Montaser-Kouhsari L, Rajimehr R. Subliminal attentional modulation in crowding condition. *Vision Res*. 45: 839-44 (2005).
- 16) Montaser-Kouhsari L, Rajimehr R. Attentional modulation of adaptation to illusory lines. *J Vis*. 4: 434-44 (2004).
- 17) Rajimehr R. Static motion aftereffect does not modulate positional representations in early visual areas. *Brain Res Cogn Brain Res*. 20: 323-7 (2004).
- 18) Rajimehr R, Vaziri-Pashkam M, Afraz SR, Esteky H. Adaptation to apparent motion in crowding condition. *Vision Res*. 44: 925-31 (2004).
- 19) Rajimehr R. Unconscious orientation processing. *Neuron*. 41: 663-73 (2004).
- 20) Rajimehr R, Montaser-Kouhsari L, Afraz SR. Orientation-selective adaptation to crowded illusory lines. *Perception*. 32: 1199-210 (2003).
- 21) Rajimehr R, Farsiu S, Kouhsari LM, Bidari A, Lucas C, Yousefian S, Bahrami F. Prediction of lupus nephritis in patients with systemic lupus erythematosus using artificial neural networks. *Lupus*. 11: 485-92 (2002).
- 22) Rajimehr R, Montaser Kouhsari L. Neurobiological modeling of bursting response during visual attention. In: 'Lecture Notes in Computer Science' (Vol. 2084). Springer-Verlag, London, UK, pp. 72-80 (2001).

Conference Abstracts:

- 1) Rajimehr R, Xu H, Tsao DY, Desimone R. Functional parcellation of lateral prefrontal cortex in macaques. *SfN 2017*, Poster.
- 2) Yargholi E, Hossein-Zadeh GA, Rajimehr R. Predicting BOLD activity in FFA from the activity in other visual areas. *OHBM 2016*, Poster.
- 3) Rajimehr R, Kornblith S, Desimone R. Functional parcellation of human visual cortex. *VSS 2014*, Talk.
- 4) Rajimehr R, Kornblith S, Desimone R. Functional parcellation of human visual cortex. *SfN 2013*, Poster.
- 5) Rajimehr R, Gregoriou G, Zhou H, Desimone R. Feature-based synchrony between prefrontal cortex and V4 during visual attention. *SfN 2010*, Talk.

- 6) Han X, Chow BY, Yang A, Zhou H, Rajimehr R, Klapoetke N, Chuong A, Desimone R, Boyden ES. Temporally precise optical neural silencing in the nonhuman primate brain. SfN 2010, Poster.
- 7) Rajimehr R, Tootell RBH. Does retinotopy influence cortical folding in primate visual cortex? SfN 2008, Talk.
- 8) Devaney KJ, Rajimehr R, Tootell RBH. Placing the place-selective cortical areas: localization in humans and monkeys. SfN 2008, Talk.
- 9) Rajimehr R, Devaney K, Young J, Postelnicu G, Tootell R. The 'Parahippocampal Place Area' responds selectively to high spatial frequencies in humans and monkeys. VSS 2008, Talk.
- 10) Bilenko NY, Rajimehr R, Young JC, Tootell RBH. The visual cortical 'word form area' is selective for high spatial frequencies in humans but not monkeys. VSS 2008, Poster.
- 11) Rajimehr R, Vanduffel W, Tootell R. Retinotopy versus category specificity throughout primate cerebral cortex. VSS 2007, Talk.
- 12) Rajimehr R, Afraz S-R. Right hemisphere dominance in attentional processing and spatiotopic representation of visual stimuli during serial search tasks. VSS 2006, Poster.
- 13) Sasaki Y, Rajimehr R, Kim BW, Knutsen T, Ekstrom L, Dale A, Vanduffel W, Tootell R. The radial orientation effect in human and non-human primates. VSS 2006, Poster.
- 14) Rajimehr R, Ekstrom LB, Vanduffel W, Tootell RBH. Retinotopic mapping in higher cortical areas of macaque cerebral cortex. SfN 2005, Talk.
- 15) Rajimehr R. Anisotropic center-surround antagonism in visual motion perception. VSS 2005, Poster.
- 16) Montaser Kouhsari L, Rajimehr R. Attentional modulation of orientation adaptation to resolvable and unresolvable patterns using brief orientation adaptation paradigm. VSS 2005, Poster.
- 17) Rajimehr R. Attentional orienting in different directions of depth modulates representation of 3-D objects in visual system. SfN 2004, Poster.
- 18) Rajimehr R. Static motion aftereffect does not modulate positional representations in early visual areas. ECVF 2004, Poster.

- 19) Montaser Kouhsari L, Rajimehr R. Attentional modulation of brief orientation adaptation to unresolvable patterns. ECVF 2004, Talk.
- 20) Rajimehr R. Perceptual modulation of orientation-selective adaptation. VSS 2004, Poster.
- 21) Montaser Kouhsari L, Rajimehr R. Subliminal attentional modulation in crowding condition. VSS 2004, Poster.
- 22) Rajimehr R. Orientation information of unresolvable Gabor patches primes ambiguous motion but not serial search. ECVF 2003, Talk.
- 23) Rajimehr R. Invisibility patterns of unresolvable Gabor patches in motion induced blindness. IBRO 2003, Poster.
- 24) Rajimehr R. Color-contingent orientation adaptation for unresolvable Gabor patches. VSS 2003, Poster.
- 25) Montaser Kouhsari L, Rajimehr R. Attention dependent illusory line-tilt aftereffect. VSS 2003, Poster.
- 26) Bahrami B, Rajimehr R. The role of feature-dependent backward masking in perceptual asynchrony. ECVF 2002, Poster.
- 27) Rajimehr R, Vaziri-Pashkam M, Afraz S-R, Esteky H. Adaptation to apparent motion in the crowding condition. FENS 2002, Poster.
- 28) Montaser Kouhsari L, Rajimehr R, Afraz S-R, Esteky H. Visual illusion without awareness. VSS 2002, Poster.
- 29) Montaser Kouhsari L, Rajimehr R. Computational modeling of spatial cueing in visual attention. ECVF 2001, Poster.