

Arman Abrahamyan

- Current Position** **Postdoctoral Research Associate, Gardner Lab, Stanford University**
Apr 2015 – Mar 2016
- *Research area:* Perceptual decision making and decision biases combining visual psychophysics, computational modelling and functional magnetic resonance imaging (fMRI)
- Previous Position** **Postdoctoral Researcher, Gardner Research Team, RIKEN Brain Science Institute, Japan**
Jun 2012 – Mar 2015
- Postdoctoral Research Associate, School of Psychology, University of Sydney, Australia**
Jun 2008 – May 2012
- *Research area:* Visual psychophysics combined with Transcranial Magnetic Stimulation (TMS).
 - *Contribution to the field:* Demonstrated a novel use of single-pulse subthreshold TMS to augment the perception of visual stimuli, which can be used as a new approach to functional brain mapping. Developed an open-source improved procedure for measuring phosphene thresholds.
 - *Acquired skills:* Visual psychophysics, signal detection theory, adaptive staircases, Psychtoolbox, processing of structural and functional MRI data in SPM, Magstim Rapid² stimulator, TMS neuronavigation systems (Brainsight and Softaxic), setting up a TMS lab.
- Education** **PhD in Experimental Psychology, Western Sydney University, Australia**
2004 – 2008
- Thesis: “Attentional Capture of Emotional Static and Dynamic Hand Gestures and Faces: The Effect of Valence in a Novel Stroop-based Paradigm”
Principle supervisor: Professor Catherine Stevens, Western Sydney University
Associate supervisor: Professor Andreas Ioannides, RIKEN Brain Science Institute, Japan
- M.S. in Applied Mathematics, Yerevan State University, Armenia**
1992 – 1997
- Minor: Computer Science
 - Thesis: “Implemented Model of Batch Text Editor”. Passed with “High Distinction”
- Peer-reviewed Journal Publications**
- Abrahamyan, A., Clifford, C. W. G., Arabzadeh, E., Harris, J. A. (2015). Low Intensity TMS enhances perception of visual stimuli. *Brain Stimulation*.
 - Lloyd D.A., Abrahamyan A., Harris J.A. (2013) Brain-Stimulation Induced Blindsight: Unconscious Vision or Response Bias? *PLoS ONE*.
 - Abrahamyan, A., Clifford, C. W. G., Arabzadeh, E., Harris, J. A. (2011). Improving visual sensitivity with subthreshold transcranial magnetic stimulation. *Journal of Neuroscience*.
 - Abrahamyan, A., Clifford, C. W. G., Ruzzoli, M., Phillips, D., Arabzadeh, E., & Harris, J. A. (2011). Accurate and Rapid Estimation of Phosphene Thresholds (REPT). *PLoS ONE*.
 - Ruzzoli, M., Abrahamyan, A., Clifford, C. W. G., Marzi, C. A., Miniussi, C., & Harris, J. A. (2011). The effect of TMS on visual motion sensitivity: an increase in neural noise or a decrease in signal strength? *Journal of Neurophysiology*.
 - Okazaki, Y., Abrahamyan, A., Stevens, C. J., & Ioannides, A. A. (2009). Wired for Her Face? Male Attentional Bias for Female Faces. *Brain Topography*.
 - Okazaki, Y., Abrahamyan, A., Stevens, C.J., & Ioannides, A.A. (2008). The timing of face selectivity and attentional modulation in visual processing. *Neuroscience*.
- Published**
- Abrahamyan, A. & Gardner, J. L. (2013), Naturally occurring and experimentally

Abstracts

induced choice history biases in human observers. Neuroscience Meeting Planner, San Diego, CA: Society for Neuroscience, 2013. Abstract.

- Abrahamyan, A. & Gardner, J. L. (2013), Past failures can bias human decisions. The 36th Annual Meeting of Japan Neuroscience Society, Kyoto, Japan.
- Abrahamyan, A. & Gardner, J. L. (2013), Past failures bias human decisions. 10th Annual Meeting, Computational and Systems Neuroscience (COSYNE) Conference Abstracts, Salt Lake City, USA.
- Abrahamyan, A., Clifford, C. W. G., Arabzadeh, E., & Harris, J. A. (2012). Low intensity TMS can facilitate identification of visual stimuli. Paper presented at the Australasian Experimental Psychology Conference, Sydney, Australia
- Abrahamyan, A., Clifford, C. W. G., Arabzadeh, E., & Harris, J. A. (2010). Improving visual sensitivity with subthreshold transcranial magnetic stimulation. Program No. 674.14/LL7 2010 Neuroscience Meeting Planner, San Diego, CA: Society for Neuroscience, 2010. Abstract.
- Ruzzoli, M., Abrahamyan, A., Clifford, C. W. G., Miniussi, C., & Harris, J. A. (2010). Effects of noise and transcranial magnetic stimulation on sensitivity to visual motion. Paper presented at the Australasian Experimental Psychology Conference, Melbourne, Australia.
- Abrahamyan, A., Clifford, C. W. G., Arabzadeh, E., & Harris, J. A. (2010). Low intensity transcranial magnetic stimulation can improve detection of visual stimuli. Paper presented at the Australasian Experimental Psychology Conference, Melbourne, Australia.
- Abrahamyan, A., Clifford, C. W. G., & Harris, J. A., (2010). Fast method for precise phosphene threshold identification in research using transcranial magnetic stimulation. Paper presented at the Australian Neuroscience Conference, Sydney, Australia.
- Abrahamyan, A., Clifford, C. W. G., Arabzadeh, E., & Harris, J. A. (2010). Low intensity transcranial magnetic stimulation can improve detection of visual stimuli. Paper presented at the Australian Neuroscience Conference, Sydney, Australia. Abstract.
- Abrahamyan, A., Stevens, C., & Ioannides, A. (2009). Attentional capture of emotional hand gestures and faces: Effects of static and dynamic stimuli. Australian Journal of Psychology. Abstract.
- Burnham, D., Abrahamyan, A., Cavedon, L., Davis, C., Hodgins, A., Kim, J., et al. (2008). From talking to thinking heads: report 2008. Paper presented at the International Conference on Auditory-Visual Speech Processing (AVSP), Queensland, Australia.
- Powers, D. M., Leibbrandt, R., Pfitzner, D., Luerksen, M., Lewis, T., Abrahamyan, A., Stevens, K. (2008). Language teaching in a mixed reality games environment. Proceedings of the 1st international conference on Pervasive Technologies Related to Assistive Environments.
- Okazaki, Y., Abrahamyan, A., Stevens, C., & Ioannides, A. A. (2006). Timing of face specificity in Fusiform Gyrus responses to stimuli in different parts of the visual field. Neuroscience Research, 55 (Supplement 1), S222-S222.
- Abrahamyan, A., Stevens, C., & Ioannides, A. (2005). The Effect of Emblematic Hand Gestures on Visual Attention. Australian Journal of Psychology, 57(Supplement 1).

Scholarships and Awards

- MARCS Institute for Brain, Behaviour and Development tuition scholarship to undertake PhD at the Western Sydney University, 2004 – 2008
- Travel Award – Experimental Psychology Conference 2005, Melbourne, Australia
- Tuition scholarship to undertake Master's degree in Applied Mathematics and Computer Science at the Yerevan State University, 1992 - 1997
- Letter of gratitude from the Military Prosecutor of the Republic of Armenia for faultless service and excellent quality of performed work, 1999

Invited Talks

- Non-invasive Brain Stimulation, Postgraduate training class, Stanford University, CA,

and Colloquia

Jun 2015

- Less Death by PowerPoint, BSI Postdoctoral Fellow Association, RIKEN, Japan, Sep 2014
- Improving Identification of Weak Stimuli with Weak TMS, CBS meeting, RIKEN Brain Science Institute, Sep 2012, Japan
- Phosphene Thresholds, and Augmenting Visual Perception with Subthreshold TMS, MARCS, Western Sydney University, Australia, Oct 2011
- TMS: History, Design, Mechanisms, Coils and Calibration, University of Sydney, Perception Group Meeting, Australia, 2011
- Accurate and Rapid Estimation of Phosphene Thresholds, TMS Workshop, Macquarie University, Australia, 2011
- Dipping into Dip: History, Mechanisms, Properties and Applications of the Dipper Function, Perception Group Meeting, University of Sydney, Australia, 2009
- Let's (Briefly) Break the Brain: Introduction to TMS and an Overview of Current Projects, Perception Group Meeting, University of Sydney, Australia, 2008
- The Effect of Affective Hand Gestures on Visual Attention, Digital Humanities Show & Tell, Western Sydney University, Australia, 2006

Ad-hoc Reviewer

- Journal of Neuroscience (1)
- Journal of Neurophysiology (2)
- Neuropsychologia (1)
- PLoS One (2)
- Optometry and Vision Science (1)

Neuroimaging Skills

- Designing psychophysical experiments combined with Transcranial Magnetic Stimulation
- Brainsight neuronavigation system for Transcranial Magnetic Stimulation
- Softaxic neuronavigation system for Transcranial Magnetic Stimulation
- Experience in designing Magnetoencephalography (MEG) experiments
- Processing of structural and functional MRI data in SPM
- Experiment programming and experimental control using Presentation stimulus delivery package
- Precise timing of a visual stimulus onset and offset using a photodiode and oscilloscope
- Participants' preparation including electrode placement to achieve optimal conductivity
- Head shape digitisation using 3D systems such as Vivid 700 and Fastrac Polhemus
- Co-registration of participants digitised head and the MEG head localisation coils for the data visualisation using participant's MRI
- Software implementation for advanced data processing and data visualisation using Interactive Data Language (IDL)
- Noise removal from the MEG signal using advanced techniques such as Independent Component Analysis (ICA)
- MEG data analysis using custom software and DataEditor from CTF Systems Inc.

Past Positions

Research Assistant, Western Sydney University, Australia

Apr 2008 – Jun 2008

- Literature search in the areas of Embodied Conversational Agents and Phonetics
- Setup and conduct experiments for the user evaluation of Embodied Conversational Agents
- Setup and data collection using Tobii eye-movement system
- Experiment programming
- Data and statistical analyses
- Assistance with the data collection

Research Assistant, Western Sydney University, Australia

Sep 2004 – Nov 2007

- Technical assistance with experiment programming and data analysis
- Troubleshooting computer software and hardware problems
- Experimental hardware and software setup
- Management of data archiving

Visiting Scientist, RIKEN Brain Science Institute, Japan

May 2005 – Aug 2005

- Participate in designing and implementing a Magnetoencephalography (MEG) experiment
- Participants' preparation including sensor placement and 3D head digitisation
- MEG data collection and data analysis
- Software programming for data visualisation and data analysis

Industry experience

Software Developer, RIKEN Brain Science Institute, Japan

Mar 2000 – Oct 2003

- Design and implementation of various programs intended for the MEG signal processing
- Software implementation of contemporary analysis methods such as mountain clustering, information discrepancy, and wavelet analysis
- Development of software for the Electromyography (EMG) signal processing
- MRI data processing
- MEG data analysis of visual and auditory experiments using custom and standard software packages

Network and Systems Administrator, Armenian Computer Centre, Armenia

Jul 1999 – Feb 2000

- Administration of large scale intranet network with complex topology
- Coordination and joining of the different types of networks (cable, E1, radio modem, dial-up, leased line)
- Design and configuration of the Intranet's new segments
- Design and implementation of the software for Intranet efficient monitoring and administration
- Unix server administration with more than 300 users
- Installation and maintenance of different kinds of the Internet servers (e.g. mail server, web server, proxy server, dial-up server)

Computer Technician, Military Prosecutor's Office of RA, Armenia

Nov 1997 – 1999

- Design and implementation of the software for the automated processing of documents
- Database design and implementation for effective use and access to the complex structured data
- Personnel training to acquire specialist software skills
- Computer network design, installation, configuration, and administration

Network and Systems Administrator, Noyan-Tapan Agency, Armenia

Jun 1997 – Nov 1997

- Implemented software for the fast processing and delivery of the news on the web
- Internet/Intranet network support and administration
- Installation and maintenance of various software packages
- Hardware and software troubleshooting

Supervision

- Supervised a group of three postgraduate diploma students to collect and analyse data for two experiments
- Assisted a PhD and an Honours student

Department Service

- Organising Perception Group weekly meetings, University of Sydney

- Setting up equipment for MARCS weekly meetings, Western Sydney University
- ‘Professional and Academic Development**
- Statistical Analysis of fMRI Data by Martin Lindquist, 6 week Coursera course, 2014 (<http://bit.ly/1HtLtCi>)
 - RIKEN Brain Science Training program, weekly lectures, 2012 - 2013
 - Early Career Researcher Program, 7 half-day workshop, University of Sydney, Sydney, Australia, 2009
 - Summer School on Psychoacoustics, Western Sydney University, Sydney, Australia, 2004
 - “Critical Thinking”, 2 days workshop, Western Sydney University, Sydney, Australia, 2004
 - “Building an Argument”, 2 days workshop, Western Sydney University, Sydney, Australia, 2004
 - “BrainVoyager” fMRI data visualisation software, 2 days training course, Tokyo, Japan, 2002
- Computer Skills**
- Operating Systems and Programming Languages**
- MS DOS, Windows 3.11/95/98/ME/NT/2000/XP/Vista, Mac OS, Unix (Solaris, Linux, FreeBSD)
 - Expertise: C, Matlab, IDL, Object Pascal. Proficiency: C++, Python, Perl, Assembly (x86 architecture)
- Office Suite, Multimedia and Other Skills**
- Proficient in using and programming in Microsoft Office
 - Corel Draw Suite, Adobe Premiere, Ulead VideoStudio
 - PC hardware/software installation/troubleshooting/repair skills
 - Statistical programs: R (I love R!), SPSS, WinPsy, GPower
- Memberships**
- Society for Neuroscience
 - The Japan Neuroscience Society
- Languages**
- English, Russian: speak fluently, read/write with high proficiency, good communication skills. Armenian: native language. Japanese: basic level
- Hobbies & Interests**
- Hiking, reading, learning, and great conversations