LONG SHA

Dartmouth College
Department of Psychological and Brain Sciences
6207 Moore Hall
Hanover, NH 03755

Tel: 603-646-9324
Mob: 408-646-6040
Email: long.sha@dartmouth.edu
Website: haxbylab.dartmouth.edu/ppl/long.html

EDUCATION:

2007-2011 **B.A. (Major in Neuroscience, *High Honors, Cum Laude*)**
Dartmouth College, Hanover, NH

GPA: 3.70/4.00, **GRE:** V670/M780
Undergraduate Senior Thesis: The effect of familiarity and novelty on visual preference across different object and scene categories (Advisor: Ming Meng Ph.D.)

Relevant courses:
Measurement and Statistics (Graduate Level)
Principles of Human Brain Mapping with fMRI
Introduction to Computational Neuroscience
System Neuroscience
Perception
Behavioral Neuroscience
Biostatistics
Machine Learning (Coursera course offered by Andrew Ng Ph.D., Stanford University)

Programming languages:
PYTHON (with PyMVPA), MATLAB (with Psychophysics Toolbox), AFNI, SUMA, FSL, FreeSurfer, SPM, R, SPSS, IGOR Pro 6, Amazon Mechanical Turk, Web2py, Java, HTML, LINUX, BASIC, PASCAL

AWARDS:

High Honors in Senior Thesis Research in Neuroscience
David C. Hudgson Endowment Grant
Neukom Scholarship
DAAD Exchange Scholarship
James O. Freedman Presidential Scholar

RESEARCH EXPERIENCES:

2011-Present **Dartmouth College, Department of Psychological and Brain Sciences**
Full-time Research Assistant, Principal Investigator: Professor James V. Haxby, Ph.D.

- Investigate principles of object representations among distributed neural activity patterns in human visual systems
- Study agreements of neural representations across different individuals
- Collect human brain activities using functional magnetic resonance imaging, and analyze neuroimaging data using methods in multivariate pattern analysis, such as classification, clustering analysis, representational similarity analysis, searchlight analysis, factor analysis and general linear model
- Collect human behavioral data using Amazon Mechanical Turk online crowdsourcing and web2py python web framework
- Prepare visual and auditory stimuli for various research projects in the lab
- Help administer laboratory database and manage logistics for laboratory meetings and conferences

2009-2011 **Dartmouth College, Department of Psychological and Brain Sciences**
Neukom Scholar & James O. Freedman Presidential Scholar, Principal Investigator: Professor Ming Meng, Ph.D.

- Conducted undergraduate Senior Honors Research on identifying statistical regularities that underlie images preference ranking from different categories of objects
- Presented first-author research poster at both the 10th and 11th Vision Sciences Society Annual Meeting
- Designed psychophysical experiments using MATLAB and Psychophysics Toolbox to regulate the image statistics, present stimuli, and record subjects' behavioral ratings
- Worked as laboratory research assistant to recruit human subjects, administer database and lab intranet

Summer 2010 **Max Planck Institute of Neurobiology, Munich, Germany**
DAAD Exchange Scholar, Principal Investigator: Professor Tim Gollisch, Ph.D.

- Investigated retinal ganglion cells' temporal adaptation to ambient luminance level using multi-electrode array on frogs
- Assessed retinal ganglion cells' response properties by deactivating the retinal ON pathway using 2-amino-4-phosphonobutyric acid
- Analyzed neuronal temporal adaptation by applying linear/non-linear model and principal component analysis in MATLAB

PUBLICATIONS:

- **Sha, L.,** Haxby, J.V., Connolly, A.C. The representation of object categories in human visual system along an animate-inanimate continuum. Annual Meeting of the Society for Neuroscience 2012, New Orleans, LA. [Abstract, Paper in preparation]
- Connolly, A.C., **Sha, L.,** Gobbini, M.I., and Haxby, J.V. Animacy hierarchy evident among representations of animal species in human object vision cortex. [In preparation]
- **Sha, L.,** Meng, M. (2010). The effect of familiarity and novelty on visual preference across different object and scene categories. Journal of Vision. 11(11): 840 [Abstract]

- **Sha, L.,** Meng, M. (2010). The Timing of Categorical Face Perception. Journal of Vision, 10(7): 676 [Abstract]
- **Sha, L.** (2006). Ba'ergen De Yangguang (巴尔根的阳光). Beijing: China Youth Press. Print. Documentary Literature. [Written in Chinese, my book on living as an exchange high school student in Switzerland]

PROFESSIONAL SOCIETY MEMBERSHIPS:

- Vision Science Society
- Society for Neuroscience

LANGUAGES:

- Mandarin (Native)
- English (Fluent)
- German (Fluent)
- Portuguese (Conversational)

RESEARCH INTEREST:

I am interested in how the brain digests perceptual information, and how we could study this problem by using various data-mining and modeling approaches. My current research project studies the major features of object representation, such as animacy, in human visual cortex.

I am currently applying for Ph.D. programs to further pursue my research interests starting fall, 2013.