HELENA WANG

Curriculum Vitae

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EDUCATION

2008 – 2013 **New York University**, New York, NY
- Ph.D., Neural Science (Sept. 2013, Thesis Advisor: David Heeger)
- Thesis Title: Suppressive Computations underlying visual and visuomotor processes

2003 – 2007 **California Institute of Technology**, Pasadena, CA
- B.S. (Honors), Engineering & Applied Science (*Concentration*: Computation & Neural Systems)
- University College London Study Abroad Program (Fall, 2006)

PUBLICATIONS

- **Wang HX**, Heeger DJ, Landy MS. (2012). Responses to second-order texture modulations undergo surround suppression. *Vision Research*. 62: 192-200.
- **Wang HX**, Freeman J, Merriam EP, Hasson U, Heeger DJ. (2012). Temporal eye movement strategies during naturalistic viewing. *Journal of Vision*. 12(1):16, 1-27.

MANUSCRIPTS

- **Wang HX**, Merriam EP, Freeman J, Heeger DJ. Motion direction preferences in human visual cortex. *Under review.*
- **Wang HX**, Kupers E, Kay KN, Heeger DJ, Winawer J. Denoising task-based EEG and MEG data. *In preparation.*
- **Wang HX**, Yuval-Greenberg S, Heeger DJ. Suppressive interactions underlying microsaccades. *In preparation*.
- **Wang HX**, Movshon JA. Spatial and temporal properties of pattern- and component-direction selective cells in area MT of the macaque. *In preparation*.

CONFERENCE PRESENTATIONS

- **Wang HX**, Merriam EP, Freeman J, Heeger DJ. (2013). Motion direction preferences in human visual cortex. Society for Neuroscience Conference, San Diego, CA. (*talk*)
- **Wang HX**, Yuval-Greenberg S, Heeger DJ. (2013). Suppressive interactions underlying visually evoked miniature saccades. *Journal of Vision*. 13(9):1338a. Vision Sciences Society Conference, Naples, FL. (*poster*)
- **Wang HX**, Landy M, Heeger DJ. (2011). Psychophysical evidence for normalization in second-order mechanisms. *Journal of Vision.* 11(11):1173a. Vision Sciences Society Conference, Naples, FL. (*poster*)

- **Wang HX**, Movshon JA. (2010). Spatial and temporal properties of pattern- and component-direction selective cells in area MT of the macaque. Program No. 74.2. Society for Neuroscience Conference, San Diego, CA. (*poster*)
- **Wang H**, Freeman J, Merriam EP, Hasson U, Heeger DJ. (2010). Temporal scramble disrupts eye movements to naturalistic videos. *Journal of Vision*. 10(7):528a. Vision Sciences Society Conference, Naples, FL. (*poster*)

RESEARCH EXPERIENCE

2013 – present *Postdoctoral Fellow*, Department of Psychology and Center for Neural Science, NYU
- Developing computational and signal processing techniques to quantify sensory cortical computations. Human fMRI, EEG, MEG.

2009 – 2013 *PhD Student*, Computational Neuroimaging Laboratory, NYU (Advisor: David Heeger)
- Using signal processing approaches to investigate visual and oculomotor processing. Human fMRI, psychophysics, eye tracking. Computational modeling.

2008 – 2009 *PhD Rotation Student*, Visual Neuroscience Laboratory, NYU (Advisor: Tony Movshon)
- Anesthetized macaque electrophysiology. Statistical analyses and modeling of single-unit data.

2007 – 2008 *Technical Staff*, Neural Circuit Theory Lab, RIKEN BSI (Advisor: Tomoki Fukai)
- Computational simulations of biophysical microcircuits and nonlinear dynamics.

2006 – 2007 *Research Assistant*, Shimojo Laboratory, Caltech (Advisor: Shinsuke Shimojo)
- Preference-based decision making. Human psychophysics and software development for macaque psychophysics.

OTHER WORK EXPERIENCE

Summer, 2006 *SURF Exchange Student*, HK Polytechnic University, Hong Kong
- Development and implementation of an aesthetic analysis system

Summer, 2005 *Intern*, NTT Communication Science Laboratories, Japan
- Implementation and evaluation of robust automatic speech recognition algorithms

Summer, 2004 *SURF Student*, Division of Chemical Engineering, Caltech
- Characterization of gene delivery agent polymers using capillary electrophoresis

TEACHING EXPERIENCE

Fall, 2011 *Teaching Assistant & Lab Instructor*, Natural Science II: Brain & Behavior, NYU
- Instructor: Wendy Suzuki

Spring, 2012 *Teaching Assistant*, Behavioral & Integrative Neuroscience, NYU
- Instructors: Bob Shapley & Andre Fenton

PROFESSIONAL TRAINING

June, 2010 Computational Neuroscience: Vision
- Summer course at Cold Spring Harbor Laboratories

HONORS AND AWARDS

2013	GSAS Dean's Student Travel Award (NYU)
2013	Vision Sciences Society Student Travel Award
2008 – 2013	MacCracken Fellowship (NYU)
2005 – 2007	Max Beeler Alcorn Scholarship (Caltech)
2006	George W. Housner Student Discovery Fund (Caltech)
2006	Gilman International Scholarship
2004	HHMI Summer Undergraduate Research Fellowship
2003	U.C. Berkeley Regents' Scholarship (declined)
2003	Francis Dealtry Alumni Merit Scholarship (Lowell High School)

PROFESSIONAL MEMBERSHIPS

- Society for Neuroscience, Vision Sciences Society, New York Academy of Sciences

SKILLS

- Programming: MATLAB, Python, C/C++, Java. Experience in R, Javascript, LISP
- Software & Operating systems: Microsoft Office, Adobe Illustrator, UNIX, MacOSX, Windows
- Languages: English (fluent), Mandarin Chinese (native), Japanese (conversational)

SELECTED COURSEWORK

- Computational: Machine learning, statistical analysis, probability theory, signal processing, linear algebra, multivariate calculus, nonlinear dynamical systems, complex analysis, image representation and analysis
- Biological: Neural computation theory, neurobiology, computational vision, behavior & cognitive neuroscience, social neuroscience, cellular, molecular & developmental neuroscience, functional brain imaging