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**Education**

- Ph.D. 2007 the University of Chicago, Chicago, IL, USA  
Integrative Neuroscience and Perception, Psychology
- M.S. 2005 the University of Chicago, Chicago, IL, USA  
Mathematical Statistics and Biostatistics
- B.S. 2000 Peking University, Beijing, China  
Psychology

**Academic/Research Positions Held**

- 2009 – Present Assistant Professor, Division of Psychology, School of Humanities and Social Sciences, Nanyang Technological University, Singapore
- 2007 – 2009 Postdoctoral Fellow, Qian Lab, Department of Neuroscience (Center for Neurobiology and Behavior), Columbia University, New York, NY, USA

**Awards and Fellowships**

- Doolittle-Harrison Fellowship, University of Chicago, 2006  
Graduate Tuition Fellowship and Stipend, University of Chicago, 2000 – 2004  
Far East Fund, Division of Social Sciences, University of Chicago, 2000 – 2001  
Chen Naiyi scholarship, Department of Psychology, Peking University, Beijing, China, 1997  
Outstanding Student Prize in Su Zhou city, Su Zhou, China, 1996

**Professional Society Membership**

- Member, Vision Science Society (VSS), Novato, CA, USA, 2010 – present  
Member, Society for Neuroscience (SfN), Washington, DC, USA, 2004 – present  
President, Student Psychology Association of Peking University, Peking University, Beijing, China, 1997  
Member, Student Psychology Association of Peking University, Peking University, Beijing, China, 1996 – 2000  
Member of Organization team, Challenge Cup in Science and Technology Contest in Peking University, Peking University, Beijing, China, 1997

## **Research Interests**

Object and face perception, Motion perception (e.g. self motion and navigation), Attention and visual search, Visual adaptation, Visual auditory integration, Visual motor integration, Perceptual learning and memory, Psychophysical experiment, computational modeling, Single-electrode recording and EEG

## **Work in Progress**

Crowding effect, nonlinear interaction among face parts in holistic processing of faces, composite face effect, locus of attention in face perception, visual auditory integration, and visual motor integration

## **Research Grants (Received)**

- 2012 – 2015 Singapore Minister of Education (MOE) Academic research fund (AcRF) Tier 1 (S\$100,000.00) **(PI)**  
*Multisensory integration in face perception – an investigation of visual and auditory interaction*
- 2012 – 2013 Nanyang Technological University Sustainable Earth Office and Centre for Infrastructure Systems (S\$50,000 and S\$40,000) **(co-PI)**  
*Driver behavioural adaptation to underground road conditions*
- 2011 – 2013 College of Humanities, Arts and Social Sciences, Nanyang Technological University, Incentive Scheme for the development of a competitive grant (S\$5,000.00) **(PI)**  
*The importance of stimulus size and type in the effect of crowding – a neurophysiology driven investigation of surround suppression theory in crowding*
- 2010 – 2011 School of Humanities and Social Sciences, Nanyang Technological University, HSS SGD 5,000 Research Grant (S\$2,500.00) **(PI)**  
*Effect of distorted face adaptation on facial expression judgment – an investigation of internal crowding effect on adaptation between expanded and contracted faces*
- 2010 – 2012 School of Humanities and Social Sciences, Nanyang Technological University, Start-Up Grant (SUG) (S\$98,826.59) **(PI)**  
*Short term plasticity of face perception – Low level adaptation contribution to facial expression and face identity judgments*

## **Publications**

*Citation (ISI Web of Science): 74*

### **Refereed International Journal Articles**

Campolo D., Widjaja F., **Xu H.**, Ang W.T. and Burdet E., Analysis of accuracy in pointing with hand-held tools via coordinate-free uncontrolled manifold method (*under review*)

**Xu H.**, Wallisch P. and Bradley D. C., The computational basis for heading perceptual decisions in a population of MSTd neurons (*under review*)

**Xu H.**, Liu, P., Dayan P. and Qian N., Dissociating low-level curvature aftereffect and high-level facial-expression aftereffect via crowding and brief adaptation, *Vision Research*, Nov. 2012; 72, 42-53

Wu J.\*, **Xu, H.\***, Dayan P. and Qian N., The role of background statistics in face adaptation, *Journal of Neuroscience*, Sep. 2009, 29: 12035-12044 (\* co-first author)

**Xu H.**, Dayan P., Lipkin R. M., Qian N., Adaptation across the cortical hierarchy: low-level curve adaptation affects high-level facial-expression judgments, *Journal of Neuroscience*, Mar. 2008; 28: 3374-3383

Bradley D. C., Troyk P. R., Berg J. A., Bak M., Cogan S., Erickson R., Kufta C., Mascaró M., McCreery D., Schmidt E. M., Towle V. L., and **Xu H.**, Visuotopic Mapping Through a Multichannel Stimulating Implant in Primate V1, *Journal of Neurophysiology*, Mar 2005; 93: 1659 - 1670.

### **Manuscripts in Progress**

**Xu H.**, Montaser-Kouhsari L. and Liu P., The spatial properties of crowding effect on face adaptation aftereffects (*to be submitted*)

**Xu H.**, Low J., Dayan P, Qian N., Local feature processing in facial expression and face identity adaptation (*in prep*)

**Xu H.**, Liu P., Qian N., Nonlinear interactions among face parts in facial-expression adaptation (*in prep*)

**Xu H.**, Margoliash D., Shank SS. and Chi Z., Using hidden Markov model to classify bird sleep stages from EEG waves (*in prep*)

### **Refereed Published Abstracts**

Liu P., Ong J. and **Xu H.** (2012), Top and bottom half faces influence equally and interact nonlinearly in face-identity adaptation, *Journal of Vision*, August 13, 2012 12(9): 623; doi:10.1167/12.9.623

**Xu H.** and Liu P. (2012), Adapting to an incomplete curve generates the same curvature aftereffect as a complete curve, *Journal of Vision*, August 13, 2012 12(9): 1052; doi:10.1167/12.9.1052

Campolo D., Widjaja F., **Xu H.**, Ang W.T. and Burdet E., A geometric approach to the Uncontrolled Manifold analysis, *Proceedings of the 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob2012)*, Page(s): vii – x

**Xu H.**, Montaser-Kouhsari L. and Liu P. (2011), Strength of the adapter signal, not adapter discriminability, produces reduced facial expression after-effect in crowding, *Journal of Vision*, September 23, 2011 vol. 11 no. 11 article 608

Wu J., **Xu, H.**, Dayan P. and Qian N. (2009), Motion-gradient defined facial expressions and the nature of face representation, *Journal of Vision*, August 5, 2009 vol. 9 no. 8 article 513

### **Conference Presentations (International)**

**Xu H.** and Liu P. (2012), Dissociating Face Identity and Facial Expression processing via Visual Adaptation, *Asia-Pacific Conference on Vision (APCV)*, Incheon, Korea

Liu P., Ong J. and **Xu H.** (2012), Top and bottom half faces influence equally and interact nonlinearly in face-identity adaptation, *Vision Science Society, Naples, FL*

Campolo D., Widjaja F., **Xu H.**, Ang W.T. and Burdet E. (2012), A geometric approach to the Uncontrolled Manifold analysis, *Proceedings of the 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob2012)*, Rome, Italy

**Xu H.** and Liu P. (2012), Adapting to an incomplete curve generates the same curvature aftereffect as a complete curve, *Vision Science Society, Naples, FL*

**Xu H.**, Liu P., Qian N. (2011), Nonlinear interactions among face parts in facial-expression adaptation, *Society for Neuroscience*, Washington, DC

**Xu H.**, Low J., Dayan P, Qian N. (2011), Local feature processing in facial expression and face identity adaptation, *The 3rd Beijing International Symposium on Computational Neuroscience*, Beijing, China

**Xu H.**, Montaser-Kouhsari L. and Liu P. (2011), Strength of the adapter signal, not adapter discriminability, produces reduced facial expression after-effect in crowding, *Vision Science Society*, Naples, FL

**Xu H.**, Shank S., Margoliash D. and Chi Z. (2010), Automatic multiple-stage classification of sleep stages of songbirds, Slide presentation, *Joint Statistical Meetings*, Vancouver, BC, Canada

Wu J., **Xu, H.**, Dayan P. and Qian N. (2009), Motion-gradient defined facial expressions and the nature of face representation, *Vision Science Society*, Naples, FL

**Xu H.**, Dayan P. and Qian N. (2008), The impact of crowding on low-level curvature aftereffect and high-level facial-expression aftereffect. Slide presentation, *Society for Neuroscience*, Washington, DC

**Xu H.**, Dayan P., Lipkin R. M. and Qian N. (2007), Low level curve adaptation affects High level facial expression judgments. Slide presentation, *Society for Neuroscience*, San Diego, CA

**Xu H.**, Wallisch P. and Bradley D. (2006), Neural basis of heading discrimination in macaque MSTd. Slide presentation, *Society for Neuroscience*, Atlanta, GA

### **Invited Lectures**

- 2012 “Visual adaptation across the cortical hierarchy”, Neuroscience and Behavioral Disorders (NBD) Seminar Series, Duke-NUS medical School, Singapore  
TGIF Seminar, SINAPSE, National University of Singapore (NUS), Singapore
- 2011 “Probing Cortical Hierarchy in Face Perception by Visual Adaptation”, Department of Psychology, Peking University, Beijing, China
- 2011 “From Vision to Audition”, Department of Computer Science, Hearing Aid Retreat, Rice University, Houston, Texas, USA
- 2009 Institute of Neuroscience, Shanghai, China  
State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, China  
Department of Psychology, Tsinghua University, China  
Department of Psychology, Peking University, China