

**Zhu Weina, PhD**  
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School of Information Science and Technology, Yunnan University  
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### **Education**

Xiamen University, Xiamen, Fujian Province, China. Ph.D in Mathematics, 2008, Department of Cognitive Science, Advisor: Professor Changle Zhou

Yunnan University, Kunming, Yunnan Province, China. Master Degree in Computational Mathematics, 2005, School of Information and Technology

Kunming University of Science and Technology, Kunming, Yunnan Province, China. Bachelor of Science, 1999, School of Information Science.

### **Experience**

2017.10 – present Professor at the School of Information Science and Technology, Yunnan University

2010.10 – 2017.09 Associate Professor at the School of Information Science and Technology, Yunnan University

2013.07 – 2017.06 Visiting Professor at the Melcher Active Perception Lab (MAP), Center for Mind/Brain Sciences (CIMeC), University of Trento, Italy

2008.10 – 2016.12 Postdoctoral researcher in the area of auditory and visual cognition, Kunming Institute of Zoology, Chinese Academy of Sciences. Supervisor: Prof. Yuanye Ma.

2010.09 – 2011.03 Postdoctoral researcher in the area of perception of natural scenes, Psychology Department, Giessen University. Supervisor: Prof. Karl R. Gegenfurtner.

2005.06 – 2008.06 Ph.D. student at the Department of Cognitive Science, Xiamen University research area: Cross cultural music effect on cognition. Supervisor: Prof. Changle Zhou.

2002.09 – 2005.06 Master student at Yunnan University researching image retrieval. Supervisor: Prof. Dan Xu.

1999.06 – 2002.09 Technician of Yunnan Branch of China Telecom Company.

1995.06 – 1999.06 Undergraduate at Kunming University of Science and Technology, School of Information Science.

### **Further Scientific Experience**

2010 European Summer School “Visual Neuroscience: from spikes to awareness” (Germany)

2010 14th IBRO-APRC Associate School of Neuroscience (Thailand)

2009 IBRO-ANS Advanced Neuroscience School on Neuroethology (Australia)

2007 10th IBRO-APRC Associate School of Neuroscience (China)

2006 Advanced seminar on synchronal ERP experiments combined with fMRI (Brainvision Inc)

2005, 2007, 2008 Neuroscan Advanced ERP training

## **Grants and Funding**

2015 – 2018 National Natural Science Foundation of China (61563056), 450,000 CNY  
2015 – 2017 High-level Foreign Expert Recruitment Grant (GDT20155300084) 170,000 CNY/year  
2015 – 2017 Yunnan Education Department Key Project (2015Z010) 40,000 CNY  
2013 – 2014 China Scholarship Council Fund for Visiting Scholars (201307035003), 1 year expenses and salary  
2013 – 2016 National Natural Science Foundation of China (61263042), 450,000 CNY  
2010 – 2012 National Natural Science Foundation of China (61005087), 200,000 CNY  
2010 – 2012 Yunnan Education Department Key Project (2010Z067) 40,000 CNY  
2009 – 2011 Yunnan Science and Technology Project (2009CD018), 75,000 CNY  
2008 – 2010 Research Fund of Yunnan University (KL080012), 20,000CNY  
2008 – 2009 Research Fund of Young Scientific Researcher of Yunnan University (030-WX069051), 20,000CNY

## **Honors and Awards**

Young Backbone Teacher of Yunnan University, 2010  
Scholarship of Anniversary of the Founding of Xiamen University, 2007/2008  
Excellent Graduate Award, Yunnan University, 2005, 2004  
Paragon Student Award, Kunming University of Science and Technology, 1999, 1998, 1997 and 1996

## **Skills**

### **Experimental psychology**

Conceptualization, design, execution and statistical analysis of human perception experiments, in particular EEG/MEG recording and analysis, tDCS, eye tracking in general (optical/camera based, EOG), psychophysics.

### **Computer Vision**

Proficient in general image processing, content based image retrieval; experienced in Fourier transforms, spectral analysis, and applications of classifiers to image-based data

### **Programming languages**

Matlab, Presentation, C/C++

## **Teaching Experience**

Digital Image Processing  
Advanced Digital Image Processing  
Multimedia Technology  
Current Advances in Computer Science  
Basic Computer Science  
Art, Cognition and Computation

## Research Interest

I am focused on information processing in the human visual system, including properties of simple geometric figures, natural scenes and faces. I use EEG, eye tracking and psychophysics as my methodology. My current research is to investigate when and where the visual information arrive consciousness. Whether human brain can process visual information without consciousness?

## Publications

### Peer-Reviewed Articles

1. Drewes J, **Zhu W(co-first author)**, & Melcher D (2017). The edge of awareness: mask spatial density, but not color, determines optimal temporal frequency for continuous flash suppression. *Journal of Vision*, 18(1), 12–12. <https://doi.org/10.1167/18.1.12>
2. **Zhu, W.**, Drewes, J., Peatfield, N.A. and Melcher, D. (2016). Differential Visual Processing of Animal Images, with and without Conscious Awareness. *Frontiers in Human Neuroscience*, 10, 513.
3. **Zhu, W.**, Drewes, J., and Melcher, D. (2016). Time for Awareness: The Influence of Temporal Properties of the Mask on Continuous Flash Suppression Effectiveness. *PLoS One*, 11, e0159206.
4. Drewes, J., Goren, G., **Zhu, W.**, and Elder, J.H. (2016). Recurrent Processing in the Formation of Shape Percepts. *The Journal of Neuroscience*, 36, 185-192.
5. Drewes J, **Zhu W\***, Wutz A, and Melcher D (2015). Dense sampling reveals behavioral oscillations in rapid visual categorization. *Nature: Scientific Reports*, 5, 16290. \*co-first author
6. Drewes J, **Zhu W**, and Melcher D (2014). Dissociation between spatial and temporal integration mechanisms in Vernier fusion. *Vision Research*, 2014, 105, 21–28
7. Drewes J, **Zhu W**, Hu Y, and Hu X (2014). Smaller Is Better: Drift in Gaze Measurements due to Pupil Dynamics. *PLoS One*, 9(10): p. e111197.
8. 诸薇娜 and 张学杰, 面孔认知: 概念、问题及其研究进展. *云南大学学报(自然科学版)* 2013. 35(3): p. 302-314.  
**Zhu W**, and Zhang X, (2013). Face Perception: Concepts, issues and advance. *Journal of Yunnan University (Science)* 35(3): p. 302-314.
9. **Zhu W**, Drewes J, and Gegenfurtner, KR (2013). "Animal detection in natural images: effects of color and image database." *PLoS One* 8(10): e75816.

10. **Zhu W**, Zhang J, and Zhou C (2013). The time course of the perceptual processing of “hole” and “no-hole” figures: An ERP study. *Neuroscience Bulletin* 29(1): p. 47-57
11. **Zhu W**, Zhang J, Ding X, Zhou C, and Ma Y (2010). Face Capture more Attentional Resource than No-face Object: An ERP study. *The 6<sup>th</sup> International Conference on Natural Computation (ICNC'10)*, p. 1953-1957.
12. **Zhu W**, Zhang J, Ding X, Zhou C, Ma Y, and Xu D. (2009). Crossmodal Effect of Guqin Music and Piano music on Selective attention: an event-related potential study. *Neuroscience Letters* 466: 21-26
13. Zhang J, **Zhu W**, Ding X, Zhou C, and Ma Y (2009). Different Masking Effects on “hole” and “no-hole” Figures. *Journal of Vision* 9(9):6 1-14
14. Zhang J, **Zhu W**, Liu H, Zhou C, and Ma Y (2009). Configural Processing of Different Topological Structure Figures: an ERP Study. *Science in China Series C: Life Sciences*. 39(9): 898-903.
15. **Zhu W**, Zhao L, Zhang J, Ding X, Liu H, Ni E, Ma Y, and Zhou C (2008). The Influence of Mozart’s Sonata K.448 on Visual Attention: An ERPs Study. *Neuroscience Letters* 434(1): 35-40.
16. **Zhu W**, Zhang J, Liu H, Ding X, Ma Y, and Zhou C (2008). Differential cognitive responses to guqin music and piano music in Chinese subjects: an event-related potential study. *Neuroscience Bulletin* 24(1): 21-28.
17. **Zhu W**, Zhou C, Xu D, and Xu J (2006). A Multi-feature CBIR Method Using in the Traditional Chinese Medicine Tongue Diagnosis. *International Symposium on Pervasive Computing and Applications* at Xinjiang, China, August 2006: 831-837.
18. 诸薇娜, 徐丹, 周昌乐 (2005), 多特征图像检索技术在中医舌诊中的应用研究. 中国图象图形学报, 2005. **10**(8): p. 992-998.  
**Zhu W**, Xu D, and Zhou C (2005). Application of Multi-feature Content-based Image Retrieval in the Traditional Chinese Medicine Tongue Diagnosis. *Journal of Image and Graphics* 10(8): 992-998. (in Chinese)
19. **Zhu W**, Xu D, and Zhou C (2004). Combining Color and Texture for Image Retrieval in the Traditional CMTD. 10<sup>th</sup> JICC, *Proceedings of the Tenth Joint International Computer Conference*, at Kunming, China, November 2004:165-172.
20. 诸薇娜, 徐丹, 周昌乐 (2004). 结合颜色纹理特征的检索技术在中医舌诊中的应用研究. 第十三届全国多媒体技术会议. 2004 :112-118  
**Zhu W**, Xu D, and Zhou C (2004). How to Combine Different Features for Image Retrieval in the Traditional CMTD. *13<sup>th</sup> National Conference of Multimedia Technology* at Ningbo, China, October 2004:112-118. (in Chinese)

21. 诸薇娜, 徐丹, 周昌乐, 基于内容的图像检索在舌诊客观化应用中的研究. 云南大学学报, 2004. **26**(5A): p. 138-143.  
**Zhu W**, Xu D, and Zhou C (2004). The Application of Content-based Image Retrieval in the Traditional Chinese Medicine Tongue Diagnosis. *Journal of Yunnan University: Natural Sciences Edition*. 26(5A): 138-143. (in Chinese)
22. 诸薇娜, 徐丹, 基于内容的图像检索综述. 云南大学学报, 2003. **25**(6A): p. 29-34.  
**Zhu W** and Xu D (2003). Review of Content-based Image Retrieval. *Journal of Yunnan University: Natural Sciences Edition*. 25(6A): 29-34. (in Chinese)

### Peer-Reviewed Abstracts

1. **Zhu, W.**, D. Jan, and M. David (2017), Mechanisms of suppression: How the classic Mondrian beats noise in CFS masking. *Vision Sciences Society annual meeting 2017*, Journal of Vision, 17: p. 141.
2. **Zhu, W.**, D. Jan, and M. David (2017). Does face familiarity depend on consciousness? . in Association for the Scientific Study of Consciousness. 2017. beijing.
3. **Zhu, W.** and J. Drewes (2017). Does our brain need awareness to “recognize” familiar faces? . in European Conference on Visual Perception. 2017. Berlin.
4. Drewes, J., **Zhu, W.**, and D. Melcher. Mask spatial density determines optimal masking frequency. in European Conference on Visual Perception. 2017. Berlin.
5. Derwes, J., **Zhu, W.**, and D. Melcher (2017), Long vs. short integrators: resting state alpha frequency predicts individual differences in temporal integration. *Vision Sciences Society annual meeting 2017*, Journal of Vision, 2017. 17: p. 725.
6. **Zhu, W.**, J. Drewes, and D. Melcher (2016). Mask temporal frequency and spatial density determine continuous flash suppression effectiveness. in Workshop on Concepts, Actions, and Objects (CAOS). 2016. Rovereto
7. **Zhu, W.**, J. Drewes, and D. Melcher (2016). The interaction between temporal properties and spatial density of the mask on continuous flash suppression effectiveness. in European Conference on Visual Perception. 2016. Barcelona.
8. Drewes, J., **Zhu, W** et al (2016). Individual temporal integration window durations correlate with resting state alpha. in European Conference on Visual Perception. 2016.
9. Zhu, W., D. Jan, and M. David, Time for awareness: mask temporal frequency determines continuous flash suppression effectiveness. *Perception*, 2015.
10. **Zhu W**, Drewes J, and Melcher D (2015). Continuous Flash Suppression Depends on Mask Temporal Frequency. *Vision Sciences Society annual meeting 2015* (ref. to be assigned).

11. **Zhu W**, Drewes J, and Gegenfurtner KR (2014). Reduced ERP amplitudes for animal stimuli in the absence of conscious awareness. *Journal of Vision*, 14(10): p. 868.
12. **Zhu W**, Du X, and Ma Y (2014). The time course of the closure superiority effect: An ERP study. *Perception* 43: p. 80.
13. **Zhu W**, Drewes J, Yue L, Du X, and Yang F (2014). The time course of the covert processing of facial identity and expression: effects on attention. *56th Conference of Experimental Psychologists (TeaP)*, Giessen, Germany.
14. **Zhu W**, Du X, Yang F, and Ma Y (2014). The effects of the covert processing of facial identity and expression on attention: an event-related potentials study. *Rovereto Workshop on Concepts, Actions, and Objects (CAOs)*, Rovereto, Italy.
15. **Zhu W**, Drewes J, Yue L, and Gegenfurtner KR (2013). Rapid object recognition in the absence of conscious awareness. *Journal of Vision*, 13(9): p. 504.
16. **Zhu W**, Drewes J, and Gegenfurtner KR (2013). Rapid recognition of unseen objects in Natural Scenes: Does your brain know what you didn't see? *Perception*, 42: p. 161. (oral presentation)
17. **Zhu W** and Ma Y (2012): Effects of closure on the processing of invisible figures: An ERP study. *Perception* 41: p. 245
18. **Zhu W** and Ma Y (2012). Different activity in the early stage of the perceptual processing of closed and open figures. *Journal of Vision*, 12: p. 1305.
19. **Zhu W**, Zhang J, Cai J, and Ma Y (2011): Different perceptual load for hole and no-hole figures in visual processing. Proceedings of the Society for Neuroscience annual meeting (SfN), at Washington DC, U.S.A., November 2011, Visual Perception and Imagery: 399.147/XX41
20. **Zhu W**, Gegenfurtner KR (2011): Animal detection in natural images: effects of color and image database. *Perception* 40: p. 95
21. **Zhu W**, Zhang J, Ma Y, and Zhou C (2009) The Different Cognitive Response of Guqin Music and Piano Music of Young Chinese: an Event-related Potential (ERP) Study. *Australian Neuroscience Society Annual Meeting* at Canberra, Australia, January 2009: 831-837.Sec2:141
22. **Zhu W**, Zhang J, Liu H, Ding X, Ma Y, and Zhou C (2007) The effect of Chinese Guqin music on cognition: an ERP study. *Progress in Biochemistry and Biophysics* 34: 21.
23. Zhang J, **Zhu W**, Zhou C, and Ma Y (2007). The processing of configural encoding of different topological figures. *Progress in Biochemistry and Biophysics* 34: 43
24. Zhang J, **Zhu W**, Zhou C, and Ma Y (2007). Masking effect on different topological visual stimuli. *Progress in Biochemistry and Biophysics* 34: 153

### **Publications without peer review process**

1. 诸薇娜, : 音乐与脑: 思维的力量, 主编: 马原野等.(云南科学技术出版社), 128-136.  
**Zhu W**, (2009). Music and Brain. In: *The Power of the Thinking*, Eds. Ma Y. Wang J. and Hu X. (Yunnan: Science and Technology Press), 128-136. (Book Chapter in Chinese)