

# Panqu Wang

CURRICULUM VITAE

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**CONTACT  
INFORMATION**

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**RESEARCH  
INTEREST**

My research interests are in Computer Vision, Machine Learning, and Cognitive Modeling. In particular, I am interested in building neurocomputational models for face and object recognition in human visual cortex using brain-inspired algorithms.

**EDUCATION**

**UNIVERSITY OF CALIFORNIA, SAN DIEGO** 2011 - 2017  
Doctor of Philosophy, Department of Electrical and Computer Engineering  
**Thesis:** Towards *The Deep Model* : Understanding Visual Recognition Through Computational Models

**FUDAN UNIVERSITY, Shanghai, China** 2007 - 2011  
Bachelor of Science, Department of Electrical Engineering

**UNIVERSITY OF CALIFORNIA, SAN DIEGO** 2010 - 2011  
Exchange Student, Department of Electrical and Computer Engineering

**PUBLICATIONS**

**Wang, P.**, Chen, P., Yuan, Y., Liu, D., Huang, Z., Hou, X., and Cottrell, G. Understanding Convolution for Semantic Segmentation. *IEEE Winter Conference on Applications of Computer Vision (WACV 2018)*. arXiv:1702.08502. 2018.

**Wang, P.** and Cottrell, G. W. Central and Peripheral Vision for Scene Recognition: A Neurocomputational Modeling Exploration. *Journal of Vision*, 17 (4):1-22. 2017.

**Wang, P.** and Cottrell, G. W. Modeling the Contribution of Central Versus Peripheral Vision in Scene, Object, and Face Recognition. In *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society. arXiv:1604.07457. 2016.

**Wang, P.**, Gauthier, I., and Cottrell, G. W. Are Face and Object Recognition Independent? A Neurocomputational Modeling Exploration. *Journal of Cognitive Neuroscience*, 28 (4):558-574. 2016.

**Wang, P.** and Cottrell, G. W. Basic Level Categorization Facilitates Visual Object Recognition. *4th International Conference on Learning Representations (ICLR 2016) Workshop*, arXiv:1511.04103. 2016.

**Wang, P.**, Malave, V., and Cipollini, B. Encoding Voxels With Deep Learning. *The Journal of Neuroscience*, 35 (48):15769-15711. 2015.

**Wang, P.**, Cottrell, G. W., and Kanan, C. Modeling the Object Recognition Pathway: A Deep Hierarchical Model Using Gnostic Fields. In *Proceedings of the 37th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society. 2015. **(Oral Presentation)**

**Wang, P.**, Gauthier, I., and Cottrell, G. W. Experience Matters: Modeling the Relationship Between Face and Object Recognition. In *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society. 2014. **(Oral Presentation)**

**Wang, P.** and Cottrell, G. W. A Computational Model of the Development of Hemispheric Asymmetry of Face Processing. In *Proceedings of the 35th Annual Conference of*

*the Cognitive Science Society. Austin, TX: Cognitive Science Society. 2013.*

**Wang, P.** and Zhang, Y. Suspicious Object Recognition Method in Video Stream Based on Visual Attention. *Leading Journal of Scientific Innovation of Fudan*, 1, 1-13, 2012. *arXiv:1308.5063*.

**ABSTRACTS AND POSTERS**

**Wang, P.**, Cottrell, G. W., and Kanan, C. Modeling the Object Recognition Pathway: A Deep Model *Vision Sciences Society Annual Meeting (VSS 2016)*, St. Pete Beach, FL, 2016.

**Wang, P.** and Cottrell, G. W. The Deep Model. *Vision Sciences Society Annual Meeting (VSS 2015)*, St. Pete Beach, FL, 2015.

**Wang, P.**, Cippolini, B., Omigbodun, A., Gauthier, I., and Cottrell, G. W. Modeling the Moderation of Experience in Face and Object Recognition. *Vision Sciences Society Annual Meeting (VSS 2014)*, St. Pete Beach, FL, 2014.

**Wang, P.**, Gauthier, I., and Cottrell, G. W. Modeling the Moderation of Experience in Face and Object Recognition. *TDLC All Hands Meeting 2014*, La Jolla, CA, 2014.

**Wang, P.** and Cottrell, G. W. A Neurocomputational Model for the Hemispheric Asymmetry Development of Face Processing. *20th Joint Symposium on Neural Computation (JSNC 2013)*, Pasadena, CA, 2013.

**Wang, P.** and Cottrell, G. W. Development Model of Face and Object Recognition Using Modular Neural Network. *Vision Sciences Society Annual Meeting (VSS 2013)*, Naples, FL, 2013.

**TALKS**

**Wang, P.** Central/Peripheral Vision and Scene Recognition: A Modeling Exploration. *32nd Meeting of the Perceptual Expertise Network*, Nashville, NC. 2016.

**Wang, P.** The [Deep] Model. *29th Meeting of the Perceptual Expertise Network*, Dallas, TX. 2014.

**Wang, P.** Exploring the Moderation of Experience in Face and Object Recognition. *UC San Diego AI Seminar*, La Jolla, CA. 2014.

**Wang, P.** Modeling the Moderation of Experience in Face and Object Recognition. *27th Meeting of the Perceptual Expertise Network*, Nashville, TN. 2013.

**Wang, P.** A Computational Model of Development of Hemisphere Asymmetry of Face Processing. *26th Meeting of the Perceptual Expertise Network*, Pittsburgh, PA. 2013.

**AWARDS AND HONORS**

<b>HP Labs Research Fellowship</b> , Hewlett-Packard	2014 - 2016
<b>TDLC Trainee Small Grant Award</b> , UC San Diego	2014
<b>Machine Learning Summer School Scholarship</b> , UC Santa Cruz	2012
<b>Jacobs Fellowship</b> , UC San Diego	2011 - 2012
<b>Outstanding Graduates Award</b> , Fudan University	2011
<b>Challenging Scholar Award</b> , Fudan University	2011
<b>National People's Scholarship</b> , Fudan University	2007 - 2010

**EXPERIENCES**

**Research Scientist** 2017 - Now  
**TuSimple**, San Diego, CA

- Lead the deep perception team to research and prototype deep learning related projects to solve perception tasks in autonomous driving.

**Graduate Student Researcher** 2012 - 2017  
**Gary's Unbelievable Research Unit**, UC San Diego, La Jolla, CA

- Building neurocomputational models to explain behavioral data and cognitive processes, especially in face, object, and scene recognition.
- Use brain-inspired algorithms to build better computer vision methods, especially in deep learning.

**Research Intern** 2016 - 2017

**TuSimple, LLC**, San Diego, CA

- Semantic segmentation using deep learning.

**Research Associate Intern** 2014 - 2015

**Hewlett-Packard Labs**, Palo Alto, CA

- Designed state-of-the-art object recognition applications using deep learning on Cog platform.

**Intern Technical PhD** 2013

**eBay Inc.**, San Jose, CA

- Designed Seller Marketing Engine (SME) offer classification system using ordinal logistic regression.

**Staff Research Assistant** 2010 - 2011

**Statistical Visual Computing Lab, UC San Diego**, La Jolla, CA

- Designed real-time automatic object detectors using discriminant saliency and Kalman filters. Implemented a family of fast object detectors on Android cellphone.

**Research Assistant** 2009 - 2011

**Image & Intelligence Lab, Fudan University**, Shanghai, China

- Multi-spectral remote sensing image registration using OSRM-SIFT algorithm.
- Intelligent video surveillance based on attention selection.

**TEACHING** **UCSD CSE 150: Artificial Intelligence** Spring 2016  
**UCSD CSE 190: Neural Networks** Fall 2015

**SERVICE** **Trainee Fellows Committee, NSF Temporal Dynamics of Learning Center (TDLC),**  
**2013 - 2016**

**REVIEWER** Neural Networks Cognitive Science Society (CogSci)  
Journal of Vision EuroVis  
Cognitive Processing ICLS  
Information Processing Letters

**PROGRAMMING SKILLS** Python, Java, Scala, Matlab, C, VHDL, Assembly, VB, SQL