

Peng Sun

Phone: 1-949-701-5761 Email: peng.sun@nyu.edu

Summary

A Mathematical Psychologist and a Data Scientist, who enjoys extracting meaningful patterns from complex human behavioral data, and who has extensive experiences in using modeling techniques to predict human behaviors in various cognitive tasks

Skills

Programming

- C/C++, Matlab, R, Python, VSG, OpenGL, Psychtoolbox

Quantitative skills

- **Machine learning:**

Linear regression, logistic regression, clustering, support vector machine, neural network, Hidden Markov Model, Gaussian Markov model

- **Statistical inference:**

Hypothesis test, Bayesian statistics

- **Other computational skills:**

Numerical solutions to Partial Differential Equations

Other techniques

- Psychological experimental design,
- Computer vision and image processing

Education

University of Birmingham, UK PhD Cognitive Psychology 2010

Projects: Psychologically inspired algorithm for intrinsic image decomposition

University of Birmingham, UK MSc Multimedia Computing 2004

Core modules: Computer vision, image processing, data engineering, natural language processing, Human Computer Interaction

Projects: EEG data acquisition and analysis in video games

Dalian Maritime University (China) BEng Automatic Control 2002

Core modules: Control theory, Artificial intelligence, Circuit design

Employment

New York University Research Scientist Jan. 2015-Present

Modeling human perception and decision making

University of California, Irvine, USA Postdoctoral fellow Oct. 2010-Jan. 2015

Using psychological experimental method and computational modeling to study Visual perception and Cognition.

University of Birmingham, UK Research assistant Jan. 2006-Oct. 2006

Imaging device calibration, display device calibration

Awards

Geoffrey J. Burton Travel Award

Applied Vision Association

February 2008

EPSRC PhD Studentship

University of Birmingham

September 2006

Publications

Sun P, Chubb C., Sperling G., (2015) Two mechanisms that determine the Barber-Pole-Illusion, *Vision Research*, 111-A, 43-54.

Sun P, Chubb C., Sperling G., (2014) A moving-barber-pole illusion, *Journal of Vision*, 14 (5): 1 doi: 10.1167/14.5.1

Sun P, Chubb C., Wright C., Sperling G., (In revision) The centroid method: a powerful tool to study feature-based-attention

Schofield, A.J., Sun, P., & Mazzilli, G. (2013) Observations on Shape-from-shading in Humans, in Dickinson, S.J., & Pizlo, Z (eds), *Shape Perception in Human and Computer Vision, Advances in Computer Vision and Pattern Recognition*, Springer-Verlag, London.

Sun P and Schofield A.J., (2012) Two operational modes in the perception of shape from shading revealed by edge information in slant setting, *Journal of Vision*, 1(12),

Sun P and Schofield A.J., (2011) The efficacy of local luminance amplitude in disambiguating the origin of luminance signals depends on carrier frequency: further evidence for the active role of second-order vision in layer decomposition, *Vision Research*, 51 (5), 496-507

Schofield A.J., Rock P, Sun P, Jiang X. and Georgeson M, (2010) What is second order vision for? Discriminating illumination versus material changes, *Journal of Vision*, 10 (9), 1-18

Sun P, Chubb C., Sperling G., (In preparation) Paradoxical plaid motion phenomenon

Sun P, Chubb C., Wright G., Sperling G., (In preparation) Attention filter for colors: Isolating a single light

Professional memberships

Vision Science Societies, Applied Vision Association, Microsoft Certified Systems Engineer

Reviewing experience

Journal of Vision, *Vision Research*, *Experimental Brain Research*, *Attention*, *Perception* and *Psychophysics*