

Junpeng Lao, PhD

Born 1986.09.05

Department of Psychology, University of Fribourg

Faucigny 2, 1700 Fribourg, Switzerland

Junpeng.lao@unifr.ch JunpengLao@gmail.com

EDUCATION:

2009.10 – 2013.9 University of Glasgow, Ph.D in Cognitive Neuroscience, Thesis title: “Tracking the temporal dynamics of cultural perceptual diversity in visual information processing”. Supervisors: Prof. Roberto Caldara; Prof. Lars Muckli.

2005.9 – 2009.6 Sun Yat-Sen University, B. Sc. in Psychology. Thesis title: “Control deprivation and styles of thinking”. Supervisors: Prof. Xinyue Zhou.

Software and algorithms:

iMap4 – Linear Mixed Model solution for statistical fixation mapping of eye movement data. It is a data-driven statistics Matlab toolbox implementing linear mixed model and non-parametric statistics based on permutation and bootstrap spatial clustering. It also has a full graphical user interface. *iMap4* is one of the three finalists of the SMI Computing Competition in ECEM 2015.

Cite as: Lao et al. (2015). *iMap4: An Open Source Toolbox for the Statistical Fixation Mapping of Eye Movement data with Linear Mixed Modeling*. Zenodo. [10.5281/zenodo.39264](https://zenodo.org/record/105281)

Strategy quantifier for face viewing – It is a Bayesian Generative model for quantifying the face viewing strategy (global or local). Using Gaussian Mixture Models, it quantifies a given observer’s fixation strategy during free-viewing of face stimuli base on the fixation location information only. It output a scale value between 0 and 1 to indicate how global or local the observer is.

Convolution-based algorithm for eye movement event detection.

EMPLOYMENT:

2013.9 – present Post-doc in University of Fribourg. I am supported by the Swiss National Science Foundation (n° 100014_138627 and n° 100014_156490/1)

2012.9 – 2013.9 Research assistant in University of Fribourg. I was supported by National Center of Competence in Research (NCCR) Affective sciences financed by the Swiss National Science Foundation (n° 51NF40-104897).

PUBLICATIONS:

- Lao, J.**, Miellet, S., Pernet, C., Sokhn, N., & Caldara, R. (in press). iMap4: An Open Source Toolbox for the Statistical Fixation Mapping of Eye Movement data with Linear Mixed Modeling. *Behavior Research Methods*.
- Bovet, J., **Lao, J.**, Bartholomé, O., Caldara, R., & Raymond, M. (2016). Mapping female bodily features of attractiveness. *Scientific Reports*, 6, 18551. [doi: 10.1038/srep18551](https://doi.org/10.1038/srep18551)
- Miellet, S., **Lao, J.**, & Caldara, R. (2014). An appropriate use of iMap produces correct statistical results: a reply to McManus (2013) "iMAP and iMAP2 produce erroneous statistical maps of eye-movement differences". *Perception*, 43, 451-457.
- Lao, J.**, Vizioli, L., & Caldara, R. (2013). Culture modulates the temporal dynamics of global/local processing. *Culture and Brain*, 1(2-4), 158-174.
- Romeo, M., Vizioli, L., Breukink, M., Aganloo, K., **Lao, J.**, Cotrufo, S., Caldara, R., & Morley, S. (2013). A Functional Magnetic Resonance Imaging Paradigm to Identify Distinct Cortical Areas of Facial Function: A Reliable Localizer. *Plastic and reconstructive surgery*, 131(4), 527e-533e.
- Miellet, S., Zhou, X., He, L., **Lao, J.**, & Caldara, R. (2012). When East meets West: gaze-contingent Blindspots abolish cultural diversity in eye movements for faces. *J. Eye Mov. Res*, 5, 1-12.
- Zhou, X., He, L., Yang, Q., **Lao, J.**, & Baumeister, R. F. (2012). Control deprivation and styles of thinking. *Journal of personality and social psychology*, 102(3), 460.

CONFERENCE PRESENTATIONS:

- 2015.9.8 – 9** Lao, J., Miellet, S., Pernet, C., Sokhn, N., & Caldara, R. (2015). iMap4: An Open Source Toolbox for the Statistical Fixation Mapping of Eye Movement data with Linear Mixed Modeling. 14th Biannual congress of the Swiss Psychological Society. (Geneva, Switzerland, **oral presentation**)
- 2015.8.16 – 21** Lao, J., Miellet, S., Pernet, C., Sokhn, N., & Caldara, R. (2015). iMap4: An Open Source Toolbox for the Statistical Fixation Mapping of Eye Movement data with Linear Mixed Modeling. 18th European Conference on Eye Movements. (Vienna, Austria, **oral presentation**)
- 2015.5.15 – 20** Lao, J., Miellet, S., Pernet, C., Sokhn, N., & Caldara, R. (2015). iMap4: An Open Source Toolbox for the Statistical Fixation Mapping of Eye Movement data with Linear Mixed Modeling. *Journal of Vision*, 15(X):#### (15th annual meeting of Vision Sciences Society)
- 2015.1.24** Lao, J., & Caldara, R. (2015). Reverse correlating facial feature use in free-viewing EEG signals. Annual Meeting of Swiss Society for Neuroscience (Fribourg, Switzerland)
- 2015.1.11 – 15** Lao, J., & Caldara, R. (2015). Reverse correlating facial feature use in free-viewing EEG signals. Alpine Brain Imaging Meeting 2015. (Champéry, Switzerland)
- 2014.8.24 – 28** Lao, J., He, L., & Caldara, R. (2014). Microsaccades boost face identification as a function of culture. 37th European Conference on Visual Perception. (Belgrade, Serbia)

- 2014.5.16 – 21** Lao, J., Vizioli, L., Muckli, L., & Caldara, R. (2014). Decoding culture from the human primary visual cortex. *Journal of Vision*, 14(10):1093 (14th annual meeting of Vision Sciences Society)
- 2014.1.12 – 16** Lao, J., Vizioli, L., Muckli, L., & Caldara, R. (2014). Decoding Culture from the Human Primary Visual Cortex. Alpine Brain Imaging Meeting 2014. (Champéry, Switzerland)
- 2013.9.11 – 12** Lao, J., He, L., & Caldara, R. (2013). Microsaccades Boost Face Identification. 13th Biannual congress of the Swiss Psychological Society. (Basel, Switzerland, **oral presentation**)
- 2013.5.10 – 15** Lao, J., He, L., & Caldara, R. (2013). Microsaccades Boost Face Identification. *Journal of Vision*, 13 (9): 1344(13th annual meeting of Vision Sciences Society)
- 2012.1.8 – 12** Lao, J., Vizioli, L., Rodger, H., & Caldara, R. (2012). Neural Adaptation Reveals Early Cultural Tunings in Perceptual Sensitivity to Local/Global Shapes. Alpine Brain Imaging Meeting 2012. (Champéry, Switzerland)
- 2011.7.15 - 18** Lao, J., Vizioli, L., Miellet, S., & Caldara, R. (2011). Eyes like it, brain likes it: Tracking the neural tuning of cultural diversity in eye movements for faces. *i-Perception* 2(4) 356. (Asia-Pacific Conference on Vision, 2011, **oral presentation**)
- 2011.5.6 - 11** Lao, J., Miellet, S., Vizioli, L., Fusco, R., & Caldara, R. (2011). Eyes like it, brain likes it: Tracking the neural tuning of cultural diversity in eye movements for faces. *Journal of Vision*, 11(11): 628. (11th annual meeting of Vision Sciences Society)
- 2011.3.26** Lao, J., Vizioli, L., Miellet, S., & Caldara, R. (2011). Eyes like it, brain likes it: Tracking the neural tuning of cultural diversity in eye movements for faces. Annual Meeting of Swiss Society for Neuroscience (Basel, Switzerland)
- 2011.1.9 - 13** Lao, J., Vizioli, L., Miellet, S., & Caldara, R. (2011). Eyes like it, brain likes it: Tracking the neural tuning of cultural diversity in eye movements for faces. Alpine Brain Imaging Meeting 2011. (Champéry, Switzerland, **oral presentation**)
- 2010.5.7 - 12** Lao, J., Foreman, K., Zhou, X., Lages, M., Hillis, J., & Caldara, R. (2010). Social judgments from faces are universal. *Journal of Vision*, 10(7): 698. (10th annual meeting of Vision Sciences Society)

AWARDS:

- 2010.12** Guarantors of Brain Travel Grant supporting the attendance of the Alpine Brain Imaging Meeting in January 2011
- 2010.5** Experimental Psychology Society Grindley Grant supporting the attendance of the Vision Science Society Annual Meeting in May 2010
- 2009.9** UK/China PhD Scholarships for Excellence programme funded by China Scholarship Council and the Scottish Government