A Computational Study of the Role of Spatial Receptive Field Structure in Processing Natural and Non-Natural Scenes

Victor J. Barranca, George Zhu

PII: S0022-5193(18)30305-9
DOI: 10.1016/j.jtbi.2018.06.011
Reference: YJTBI 9506

To appear in: *Journal of Theoretical Biology*

Received date: 10 April 2018
Revised date: 30 May 2018
Accepted date: 12 June 2018

Please cite this article as: Victor J. Barranca, George Zhu, A Computational Study of the Role of Spatial Receptive Field Structure in Processing Natural and Non-Natural Scenes, *Journal of Theoretical Biology* (2018), doi: 10.1016/j.jtbi.2018.06.011

Highlights

- Localized receptive fields and nonlinear dynamics give rise to illusory effects
- Center-surround receptive fields facilitate accurate encoding of natural scenes
- Model networks with several classes of receptive fields are proposed and compared
- A compressive sensing framework is developed for analyzing stimulus encoding