

Laurent Perrinet

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Research interests

I am interested in bridging the gap between the structure and the function of neural systems by showing how they optimally adapt to the statistics of natural environments.

Areas of specialization

Spatio-temporal inference in low-level sensory areas. Unsupervised learning in topographic maps. Predictive processes and active perception.

Education

2014	HDR Aix-Marseille Université
1999-2003	PhD in Cognitive Neuroscience, ONERA/DTIM, Toulouse (France)
1993 - 1998	MSC in Engineering SUPAÉRO (Toulouse, France), one of the leading French Engineering Schools ("Grandes Ecoles"). Specialization in stochastic models for signal and image processing.

Selected publications

2023	Hugo Ladret, Nelson Cortes, Lamyae Ikan, Frédéric Chavane, Christian Casanova, Laurent U Perrinet. "Cortical recurrence supports resilience to sensory variance in the primary visual cortex." Nature Communications Biology .
2021	Victor Boutin, Angelo Franciosini, Franck Ruffier, Frédéric Chavane and Laurent U Perrinet. "Sparse Deep Predictive Coding captures contour integration capabilities of the early visual system." PLoS Computational Biology .
2020	Chloé Pasturel, Anna Montagnini and Laurent Perrinet. "Humans adapt their anticipatory eye movements to the volatility of visual motion properties." PLoS Computational Biology .
2012	Karl Friston, Rick A. Adams, Laurent Perrinet and Michael Breakspear, "Perceptions as Hypotheses: Saccades as Experiments", Front in Psychology .
2012	Claudio Simoncini, Laurent Perrinet, Anna Montagnini, Pascal Mamassian and Guillaume Masson, "More is not always better: dissociation between perception and action", Nature Neuroscience .
2010	Laurent Perrinet, "Role of homeostasis in learning sparse representations", Neural Computation .
2004	Laurent Perrinet, Manuel Samuelides and Simon Thorpe, "Coding static natural images using spiking event times : do neurons cooperate?", IEEE Transactions on Neural Networks .