Laurent U. Perrinet

Researcher in Computational Neuroscience
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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.

Born: February 23rd, 1973—Bordeaux, France
Nationality: French

Current position

since 2004 *Researcher (CR1)*, Institut de Neurosciences de la Timone (INT).

Areas of specialization

Spatio-temporal inference in low-level sensory areas.
Motion Perception.
Free-energy and active perception.

Appointments held

2010–12 Visiting Scholar, UCL (London, UK). Karl Friston's theoretical neurobiology group.

1999 Research Scholar, USAFB (Rome, NY) / University of San Diego in California.

1997 Research Scholar, Jet Propulsion Laboratory (Nasa), Pasadena, California. Department of Terrestrial Science, Imaging Radar Laboratory

9/1995-6/96 Engineer at Alcatel, Vienna (Austria). Department of Voice Processing Systems.

Education

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

Journal articles

2012 Karl Friston, Rick A. Adams, Laurent U. Perrinet and Michael Breakspear, "Perceptions as Hypotheses: Saccades as Experiments", **Frontiers in Psychology**.

2012 Claudio Simoncini, Laurent U. Perrinet, Anna Montagnini, Pascal Mamassian and Guillaume S. Masson, "More is not always better: dissociation between perception and action explained by adaptive gain control", **Nature Neuroscience** (in press).

2012 Paula S. Leon, Ivo Vanzetta, Guillaume S. Masson and Laurent U. Perrinet, "Motion Clouds: Model-based stimulus synthesis of natural-like random textures for the study of motion perception", **Journal of Neurophysiology**.

2012 Laurent U. Perrinet and Guillaume S. Masson, "Motion-based prediction is sufficient to solve the aperture problem", **Neural Computation**.

2011 Guillaume S. Masson and Laurent U. Perrinet, "The behavioral receptive field underlying motion integration for primate tracking eye movements", **Neuroscience and biobehavioral reviews**.

2010 Laurent U. Perrinet, "Role of homeostasis in learning sparse representations", **Neural Computation**.

2007 Frederic Barthelemy, Laurent U. Perrinet, Eric Castet, and Guillaume S. Masson, "Dynamics of distributed 1D and 2D motion representations for short-latency ocular following", **Vision Research**.

2007 Laurent U. Perrinet and Guillaume S. Masson, "Modeling spatial integration in the ocular following response using a probabilistic framework", **Journal of Physiology (Paris)**.

2004 Laurent U. Perrinet, Manuel Samuelides and Simon Thorpe, "Coding static natural images using spiking event times : do neurons cooperate?", **IEEE Transactions on Neural Networks**.

Book chapter

2007 Laurent U. Perrinet (2007) "Dynamical neural networks: modeling low-level vision at short latencies". In *Topics in Dynamical Neural Networks: From Large Scale Neural Networks to Motor Control and Vision*: volume 142 of **The European Physical Journal (Special Topics)**. Springer Berlin / Heidelberg.