

A General Framework for Quantifying Representational Interactions Using Information Theory

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Submitter Robin Ince

Affiliation Institute of Neuroscience & Psychology, University of Glasgow

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Presentation Abstract Summary To begin understanding the mechanisms of information processing in brain networks we need to develop more powerful methodologies that can address the following foundational challenges: (1) to relate stimulus information with its representation in the brain and simultaneously with behavioural outcomes, (2) to relate stimulus representations from different times, in different brain regions and across different measurement modalities to reconstruct information processing networks and (3) to understand how different aspects of complex naturalistic stimuli are coded and processed in network nodes. Here, we present a novel methodology based on information theoretic quantification of redundant and synergistic representational interactions that addresses all these challenges in a common, general framework.

Co-author Information

* Presenting Author

First Name	Last Name	Affiliation	E-mail
Robin *	Ince *	Institute of Neuroscience & Psychology, University of Glasgow	robin.ince@glasgow.ac.uk
Nicola	van Rijsbergen	Institute of Neuroscience & Psychology, University of Glasgow	nicola.vanrijsbergen@glasgow.ac.uk
Hyojin	Park	Institute of Neuroscience & Psychology, University of Glasgow	hyojin.park@glasgow.ac.uk

Joachim	Gross	Institute of Neuroscience & Psychology, University of Glasgow	joachim.gross@glasgow.ac.uk
Philippe	Schyns	Institute of Neuroscience & Psychology, University of Glasgow	philippe.schyns@glasgow.ac.uk

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