# Accounting for the Computational Basis of Consciousness

Ron Sun
CECS Department
University of Missouri-Columbia

I will argue for an explanation of the mechanistic (computational) basis of consciousness that is based on the distinction between localist (symbolic) representation and distributed representation, the ideas of which have been put forth in the connectionist literature.

A model is developed to substantiate and test this approach. I will also explore the issue of the functional roles of consciousness, in relation to the proposed mechanistic explanation of consciousness.

The model, embodying the representational difference, is able to account for the functional role of consciousness, in the form of the synergy between the conscious and the unconscious. The fit between the model and various cognitive phenomena and data (documented in the psychological literatures) is discussed to accentuate the plausibility of the model and its explanation of consciousness. Comparisons with existing models of consciousness will also be made.