

Independent Component Analysis and Exploratory Projection Pursuit: two faces of the same coin?

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Abstract

Independent Component Analysis has been developed within the neural network and signal processing community as a tool to recover several signals emitted by separate sources. It accomplishes this task by identifying hidden variables defined as those linear combinations of the observed ones which are mutually independent and therefore maximally non-gaussian. Exploratory Projection Pursuit has been developed as a data visualization tool aimed at picking up linear projections of the observed data capable of showing the non-linear structure inherent in the data themselves. This amounts to look for the least gaussian projections. In spite of the different origins the two methods seem to lead to very close results. In this paper we attempt to critically investigate the common and the different aspects of the two methods.

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