

POSTER PRESENTATION

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Large-scale analysis of perceptual odor data

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It is a general problem in sensory processing to understand which aspect of the sensory input is relevant to perception. In olfaction, because of the high-dimensionality, and the difficulty in describing smells [1]. One of the core questions in olfaction is therefore the so-called structure-odor relationships. A deeper understanding of olfaction should involve aspects of natural stimulus statistics, odorant properties, physiological responses, evolution, odor perception, and behavioral relevance. As a step towards computational analyses in this direction, I accumulated a database consisting of several hundred perceptual descriptors for several thousand odors by merging data from different publicly available sources. Preliminary results from this dataset based on unsupervised and unsupervised methods are presented here. These preliminary results could give a better idea of the dimensionality of the odor space, and of how to approach studies of structure-odor relationships.

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Reference

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