

To determine whether activity-dependent lateral inhibition could decorrelate initially similar inputs, we generated 16 different input maps with varying correlation (representing odors of varying similarity) for each 25×25 array of neurons. The digital image used in **Figure 6f** was captured using a Sony DSC-P72 digital camera. The image was down-sampled to 300×427 pixels and imported to Matlab. This image was then used as the input map for the computational model.

Note: Supplementary information is available on the Nature Neuroscience website.

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AUTHOR CONTRIBUTIONS

A.A. and N.U. designed all experiments (including computational) except for those in **Figure 5**, which were designed by V.K. and N.U. A.A. conducted and analyzed all experiments except for those in **Figure 5**, which were conducted and analyzed by V.K. A.A. and N.U. wrote the manuscript.

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