

Location Layer in Grid Cells

Chapter Revision History

The table notes major changes between revisions. Minor changes such as small clarifications or formatting changes are not noted.

Version	Date	Changes	Principal Author(s)
0.5	Nov 2019	Initial release	C. Maver

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In this chapter, we describe the underlying neural mechanism of how the cortex processes a sensorimotor sequence by converting it into a sequence of sensory features at object-centric locations. Our October 2017 paper, "[A Theory of How Columns in the Neocortex Enable Learning the Structure of the World](#)," proposed that the cortex processes a sensorimotor sequence. It then learns objects by learning sets of sensory features at locations. However that paper did not provide a neural mechanism for computing object-centric locations. This new paper provides such a neural mechanism. With this missing piece filled in, we present a neural network model that learns to recognize static objects, receiving only a sensorimotor sequence as input.

This concept was published in a peer-reviewed paper, "Locations in the Neocortex: A Theory of Sensorimotor Object Recognition Using Cortical Grid Cells," in the journal *Frontiers in Neural Circuits*. The paper also has an accompanying video. You can find these resources, along with FAQs [here](#)