Model-based fMRI

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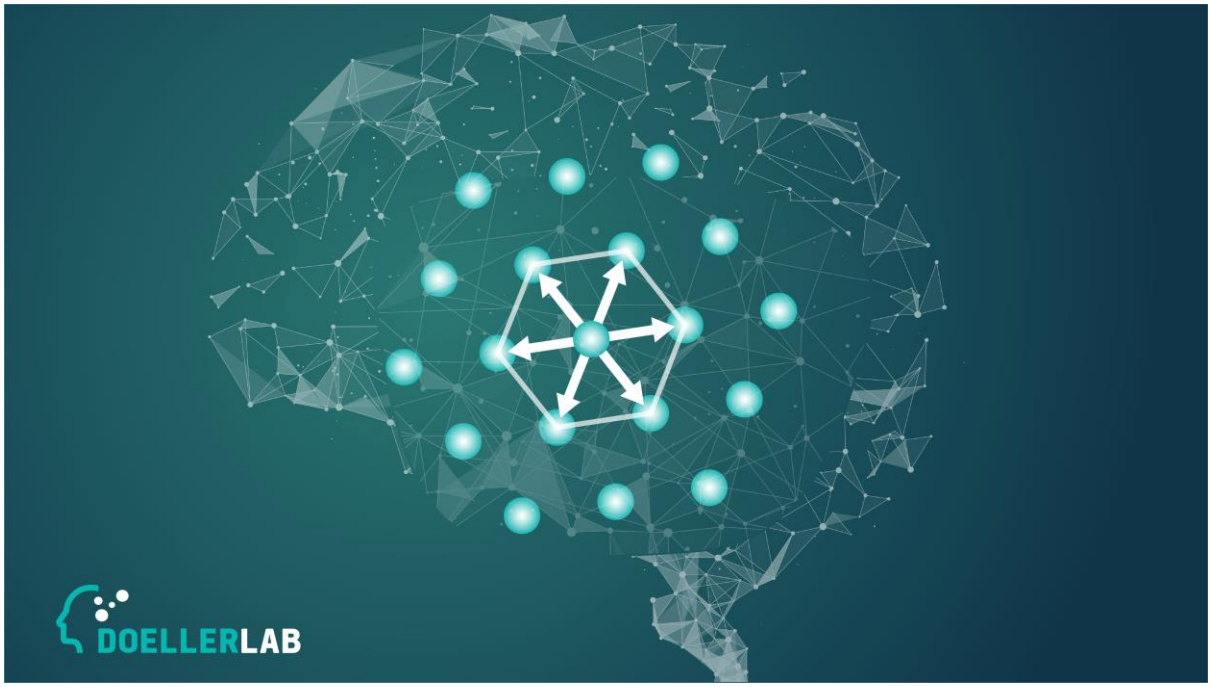

Abstract:

Model-based analyses can be a powerful approach to link neural coding mechanism to the BOLD-response we measure using fMRI. For example, a model derived from the characteristic hexagonal firing patterns of grid cells in the rodent entorhinal cortex led to the discovery of hexadirectional signal in the human brain (Doeller et al. Nature 2010). Such grid-like codes are now thought to be central for human cognition beyond spatial navigation (Bellmund et al. Science 2018). In this workshop, we will discuss how hexadirectional signals and other complex coding mechanisms can be studied using fMRI. We will introduce advanced analysis concepts and tools such as the GridCAT toolbox.

Requirements:

Some basic knowledge of fMRI, MATLAB