

Название публикации:

Neural Architecture for Complex Scene Recognition Based on Rank-order Features of IT Neurons

Авторы:

Tarasenko, S [1] ; Efremova, N [1]

[1] Plekhanov Russian Univ Econ, Dept Informat Technol, Moscow 117997, Russia

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Аннотация:

Human brain is an information processing system, which is perfectly designed to deal with complex visual scenes. We propose a novel architecture for object and place recognition, taking inspiration from the primate ventral visual stream (areas V1-IT). The functionality of the system is based entirely on recent neurophysiological findings and is implemented by means of biologically plausible information processing mechanisms. We illustrate the ability of the system to recognise multiple objects within various positions in the retinal image. During the experiments, we show that the network can learn to recognise the position of object, in which it appears most frequently. Simulation results are consistent with the animal experiments. The above-mentioned properties of the network demonstrate classification and rank-object preserving properties of the neurons in the IT region.

Ключевые слова:

Object recognition; visual-cortex; representation; position; monkeys