

Quantitative Encoded Neuron

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Quantitative encoded neurons are neurons that encode information in a quantitative way, such as by firing rates, spike trains, or other neural coding schemes.

Firing rates

The number of spikes in a short time window is a robust code that can be read quickly.

Spike trains

The timing of spikes within a single neuron's spike train can convey information.

Neural coding schemes

These schemes include rate coding, temporal coding, population coding, and correlation coding.

Midbrain dopamine neurons

These neurons encode the difference between the current reward and a weighted average of previous rewards.

Here are some other examples of quantitative encoding in the brain:

- Posterior parietal cortex:** This part of the brain represents both continuous and discrete quantity.
- Intrinsic diversity:** The differences in morphological features or distributions of ion channels between neurons is a system that helps transmit information efficiently.

Midbrain Dopamine Neurons Encode a Quantitative Reward ...

Summary. The midbrain dopamine neurons are hypothesized to provide a physiological correlate of the reward prediction error signal...

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Scholarly articles for Quantitative Encoded Neuron

... and present stimuli encoded by spikes of A1 neurons - Klampfl - Cited by 51

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... neurons encode a quantitative reward prediction error ... - Bayer - Cited by 1688





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Neural coding

Neural coding (or **neural representation**) is a neuroscience field concerned with characterising the hypothetical relationship between the stimulus and the ...

Nature
<https://www.nature.com> > scientific reports > articles

Quantitative analyses of how optimally heterogeneous ...


by H Roh · 2024 — Information theory serves as a crucial tool for quantifying the information **encoded** by cells regarding stimuli and elucidating the intricate ...

Cell Press
<https://www.cell.com> > neuron > pdf

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by HM Bayer · 2005 · Cited by 1688 — These results indicate that the firing rate of this **neuron** during the rewarded interval is **quantitatively** correlated with the difference between.

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Neural Coding - an overview

Neural coding refers to the process of deciphering the information conveyed through the discharge patterns of **neurons** in the primary motor cortex of awake ...



PNAS

<https://www.pnas.org> › doi › pnas.0909180107

Basic mathematical rules are encoded by primate ...

by S Bongard · 2010 · Cited by 116 — These data show that single PFC **neurons** have the capacity to represent flexible operations on most abstract numerical quantities.



Oxford Academic

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Neuronal encoding, and information theory - Oxford Academic

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