Artificial Neural Networks: Oscillations, Chaos, and Sequence Processing

Lipo Wang and Daniel L. Alkon

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Contents

Common terms and phrases

activity Adaline adaptive filter amplitude analog Artificial Neural Networks associated attractor bifurcations brain cells channels chaos chaotic dynamics circuit clusters coherence complex connection strengths correlation corresponding cortex coupled coupled oscillators curve delay line desired response digit dynamic system equation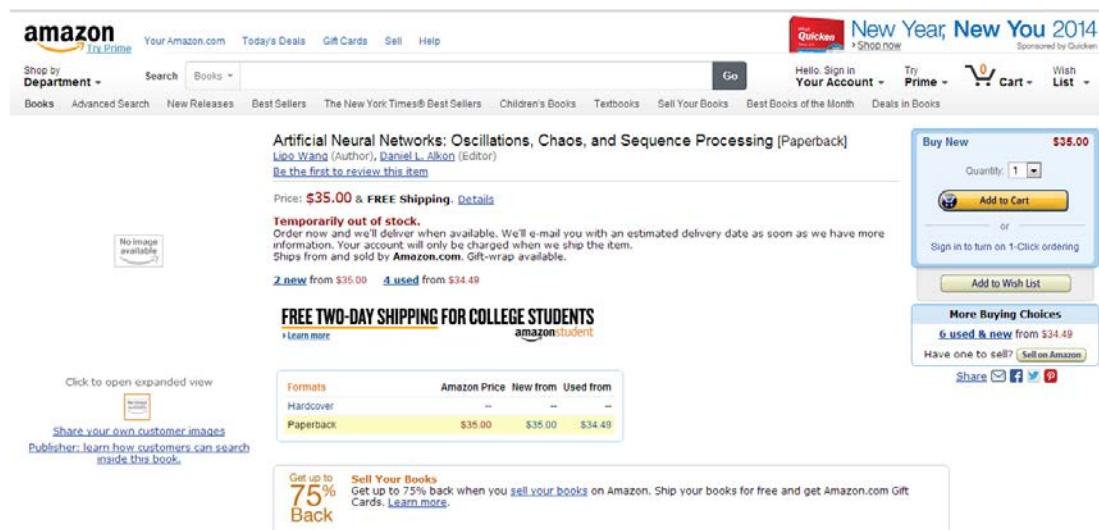s example excitatory feature detectors feedback Figure fractal Freeman frequency fully connected network function G-cell heart rate Hopfield IEEE inhibitory initial conditions input pattern interaction layer mechanisms mitral cells network model neural oscillators neural systems neurons noise nonlinear olfactory system oscillators output parameters pattern recognition period period-doubling bifurcations phase Phys plot points postsynaptic potential presented Proc properties pulse quantized random receptive fields receptors Recognition Accuracy recognition units rhythmic scale sensory shown in Fig simulation slow synaptic spatial speech recognition stable stimulus synaptic components synaptic connections temporal threshold transition values vector visual weights

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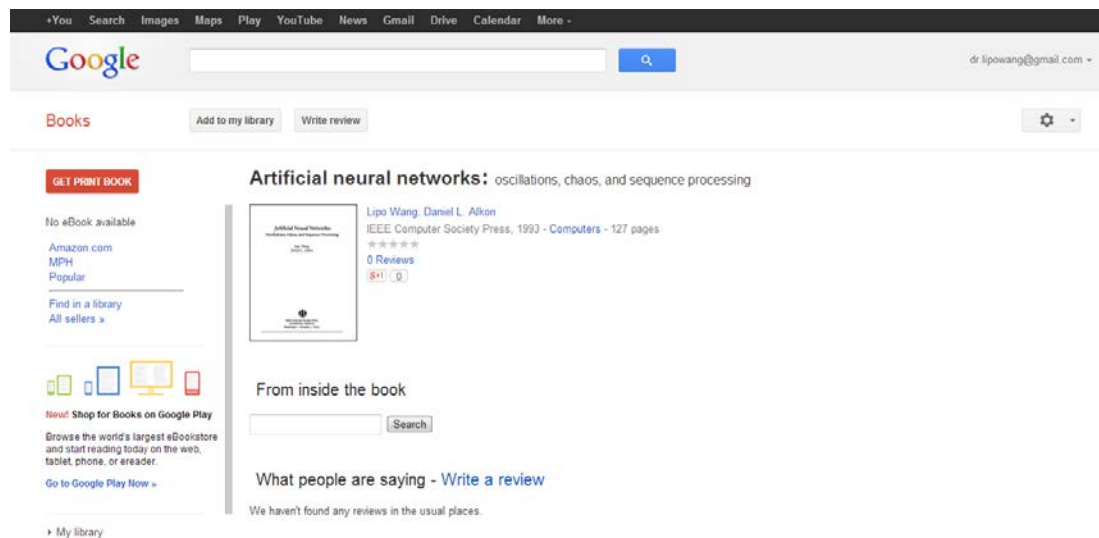
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