

Programmable Analog Pulse-Firing Neural Networks

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Abstract: We describe pulse - stream firing integrated circuits that implement asynchronous analog neural networks. Synaptic weights are stored dynamically, and weighting uses time-division of the neural pulses from a signalling neuron to a receiving neuron. MOS transistors in their "ON" state act as variable resistors to control a capacitive discharge, and time-division is thus achieved by a small synapse circuit cell. The VLSI chip set design uses 2.5J.1.m CMOS technology.