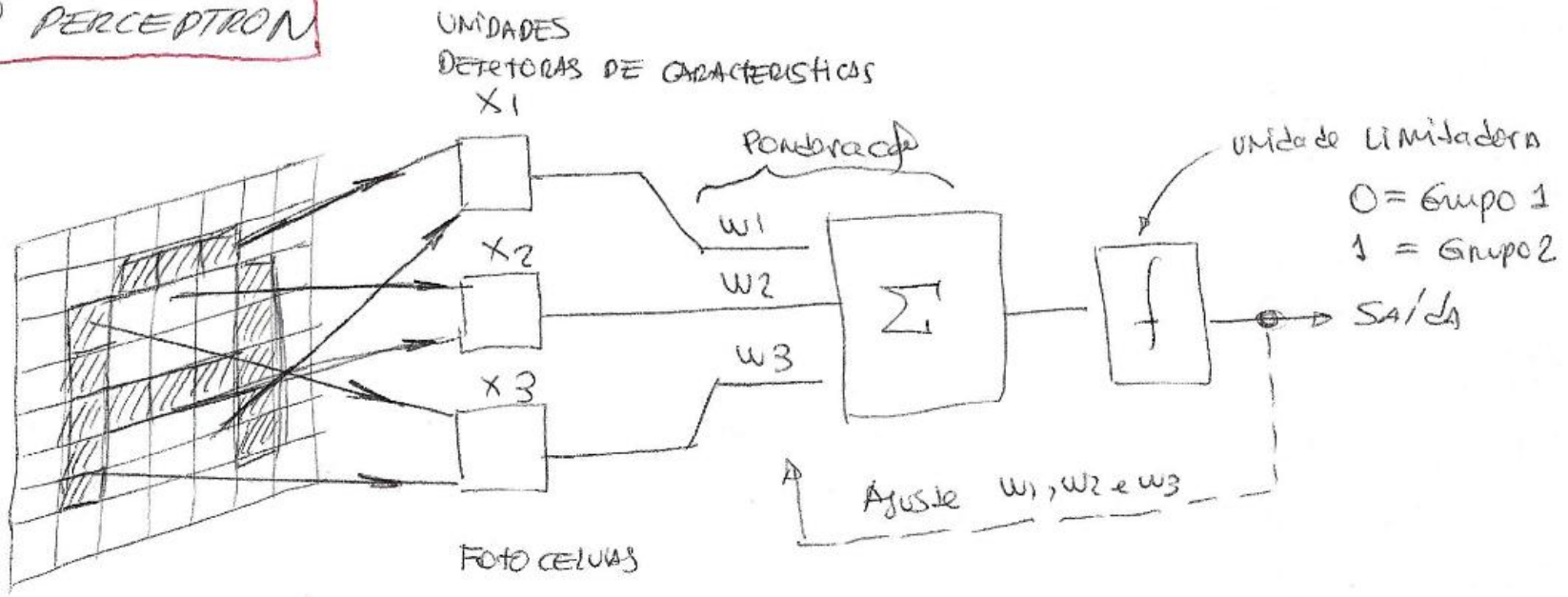
Neurocomputer

Mark I Perceptron

O PERCEPTRON



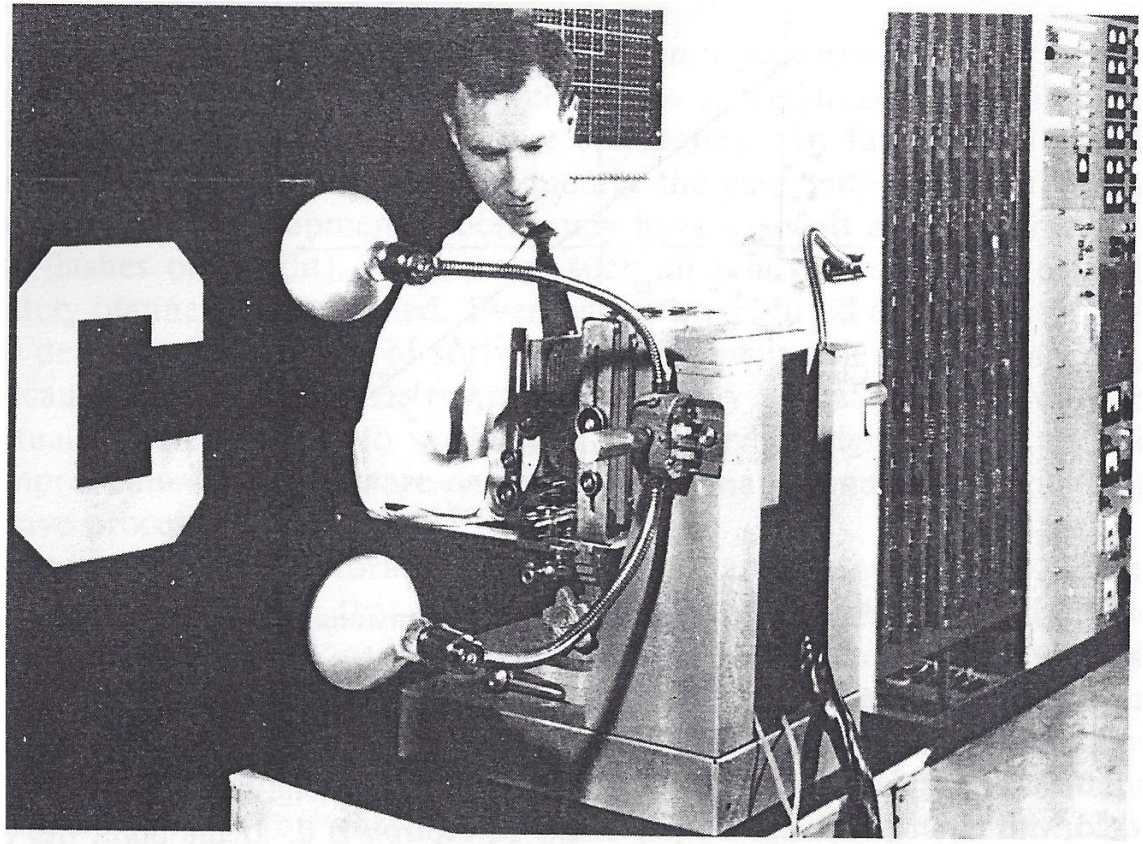
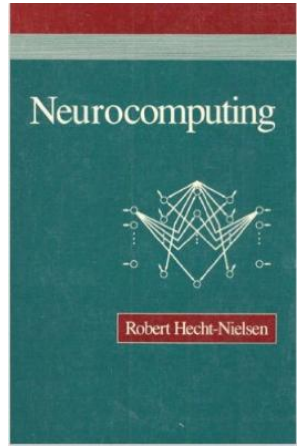


Fig. 1.3. • The Mark I Perceptron image input system being adjusted by Charles Wightman, Mark I Perceptron project engineer. A printed character was mounted on the board and illuminated with four floodlights. The image of the character was focused on a 20 × 20 array of CdS photoconductors — which then provided 400 pixel values for use as inputs to the neural network (which then attempted to classify the figure into one of M classes — "A", "B", etc.). Photo courtesy of Arvin Calspan Advanced Technology Center.



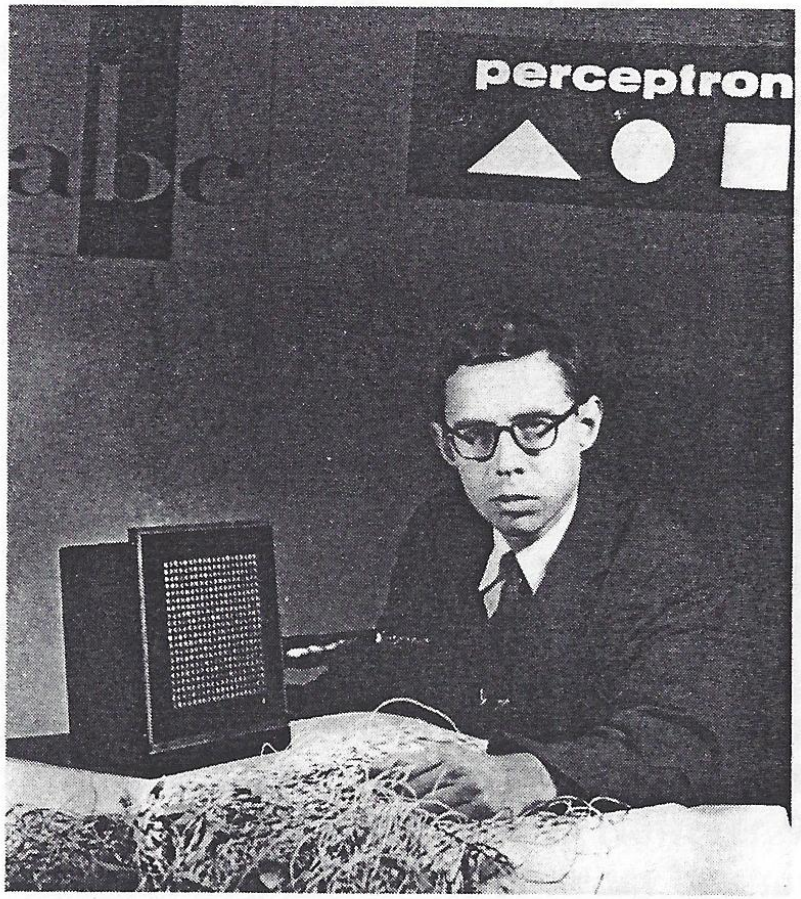
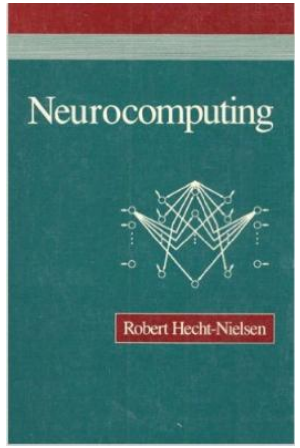


Fig. 1.4. • Frank Rosenblatt (the inventor of the perceptron and designer of the Mark I Perceptron neurocomputer) with the 400 pixel (20 × 20) Mark I Perceptron image sensor. Photo courtesy of Arvin Calspan Advanced Technology Center.



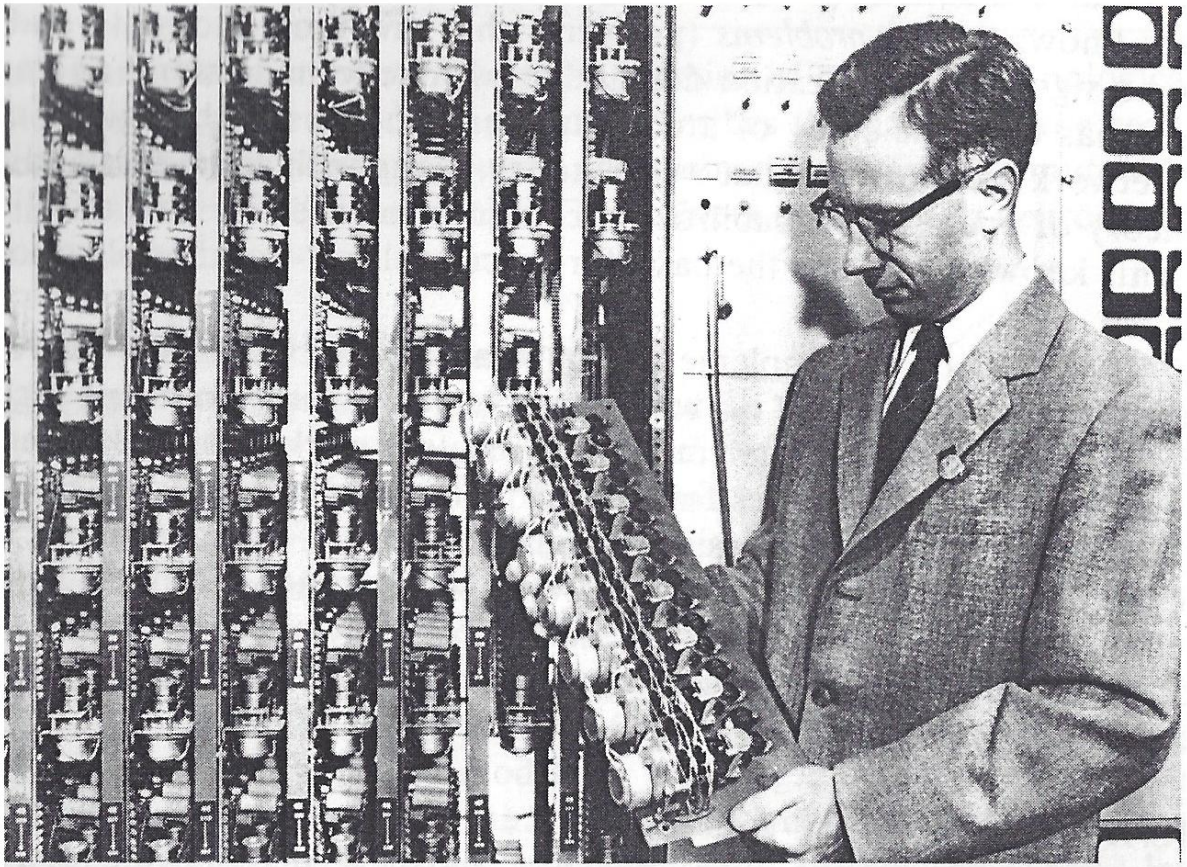
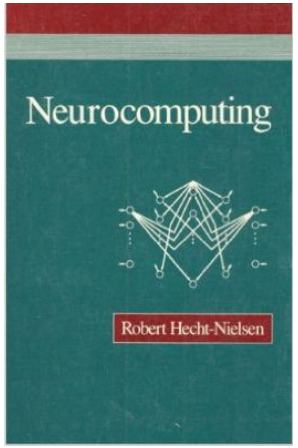
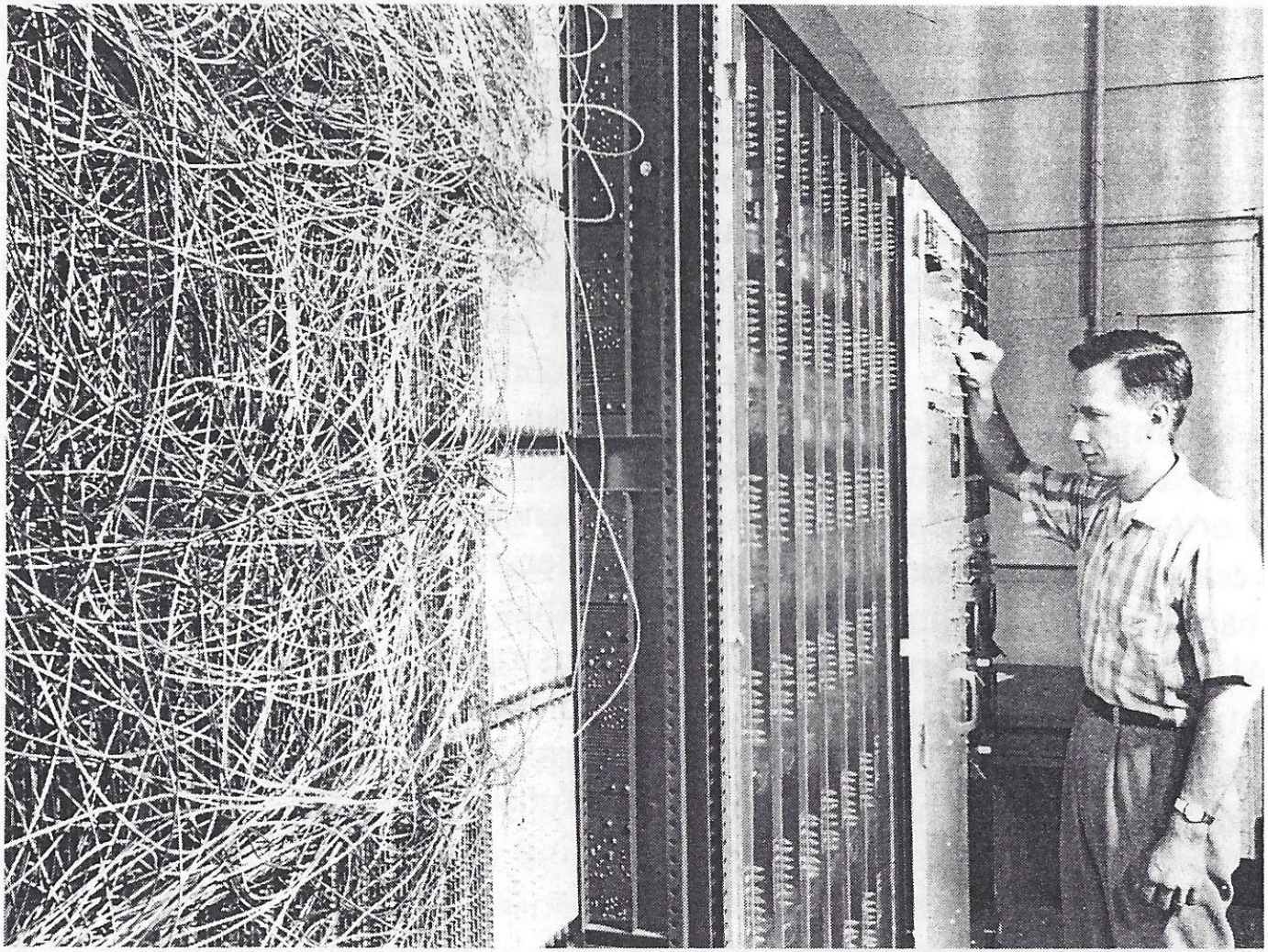


Fig. 1.5. • Charles Wightman holding a subrack of 8 motor/potentiometer pairs. Each motor/potentiometer pair functioned as a single adaptive weight value. The perceptron learning law was implemented in analog circuits that (when properly wired through the patchboard shown in Figure 1.6) would control the motor of each potentiometer (the resistance of which functioned to implement one weight). Photo courtesy of Arvin Calspan Advanced Technology Center.





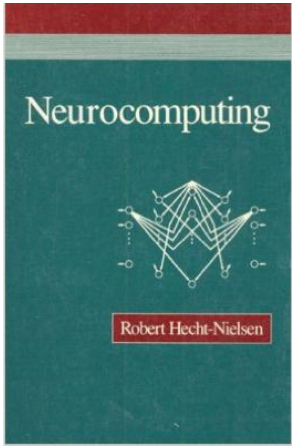


Fig. 1.6. • The Mark I Perceptron patchboard. The connection patterns were typically "random", so as to illustrate the ability of the perceptron to learn the desired pattern without need for precise wiring (in contrast to the precise wiring required in a programmed computer). Photo courtesy of Arvin Calspan Advanced Technology Center.

Obrigado