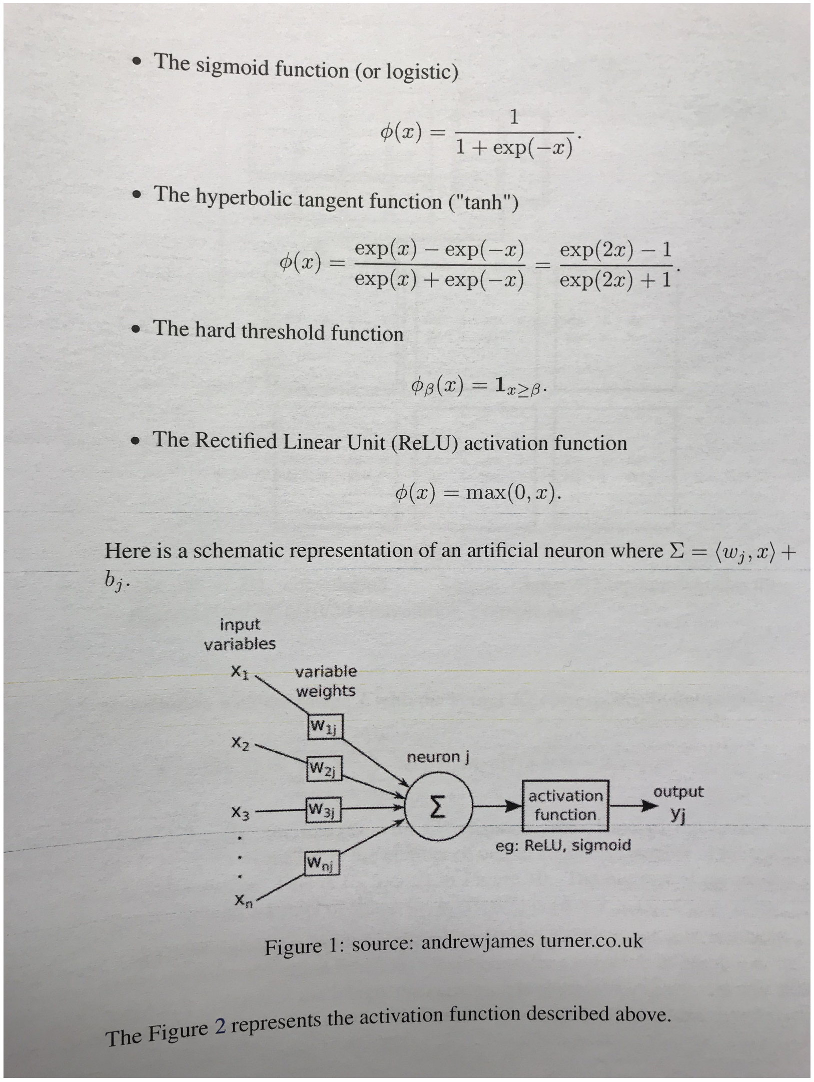
1819-108-C1-W10

Reinis Lācis

April 2019

Orġinālā bilde



- The sigmoid function (or logistic)

$$\phi(x) = \frac{1}{1+\exp(-x)}.$$

- The hyperbolic tangent function ("tanh")

$$\phi(x) = \frac{\exp(x)-\exp(-x)}{\exp(x)+\exp(-x)} = \frac{\exp(2x)-1}{\exp(2x)+1}.$$

- The hard threshold function

$$\phi_\beta(x) = \mathbf{1}_{x\geq\beta}.$$

- The Rectified Linear Unit (ReLU) activation function

$$\phi(x) = \max(0, x).$$

Here is a schematic representation of an artificial neuron where $\Sigma = \langle w_j, x\rangle + b_j$.

Figure 1: source: andrewjames turner.co.uk

The Figure 2 represents the activation function described above.

- The sigmoid function

$$\phi(x) = \frac{1}{1 + exp(-x)}.$$

- The hyperbolic tangent function ("tanh")

$$\phi(x) = \frac{exp(x) - exp(-x)}{exp(x) + exp(-x)} = \frac{exp(2x) - 1}{exp(2x) + 1}.$$

- The hard threshold function

$$\phi_\beta(x) = 1_{x \geq \beta}.$$

- The Rectified Linear Unit (ReLU) activation functions

$$\phi(x) = max(0, x).$$

Here is a schematic representation of an artificial neuron where $\sum = \langle w_j, x\rangle + b_j$.

```
    \documentclass{article}
\usepackage[utf8]{inputenc}
\usepackage{graphicx}

\title{1819-108-C1-W10}
\author{Reinis Lācis }
\date{April 2019}

\begin{document}

\maketitle

%\section{Introduction}

\newpage
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\includegraphics[scale=0.1, angle=-90]{bilde.jpg}
\newpage

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