Formulas

Kristaps Rubuls

01.04.2019.

Paraugs:

- 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 $\Sigma = \langle w_j, x \rangle + b_j$.

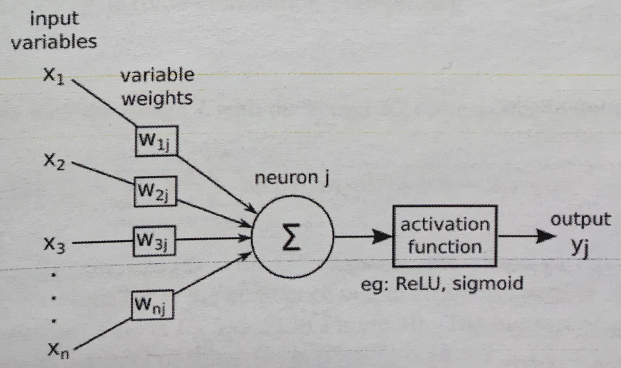

Figure 1: source: andrewjames turner.co.uk

The Figure 2 represents the activation function described above.

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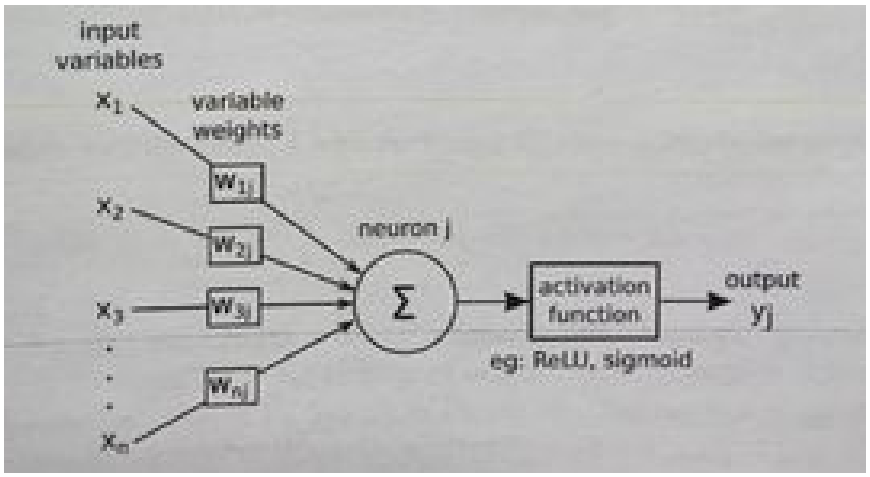
Here is a schematic representation of an artificial neuron where $\sum = \langle \omega_j, x \rangle + b_j$.



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Kods:

```
\documentclass{report}
\usepackage[utf8]{inputenc}
\usepackage{verbatimbox}
\usepackage{graphicx}
\usepackage{amsmath,amssymb,latexsym}
\usepackage{ragged2e}
\usepackage{rotating}
\graphicspath{ {/home/user/images/} }

\title{Formulas}
\author{Kristaps Rubuls}
\date{01.04.2019.}

\begin{document}
\pagestyle{empty}
\maketitle

Paraugs:

\includegraphics[scale=0.12,angle =-90]{IMG_1205.jpg}
\clearpage

\begin{itemize}
    \item The sigmoid function (or logistic)\
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\item The hard threshold function
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\item The Rectified Linear Unit (ReLU)
activation function
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\end{itemize}

\noindent
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artificial neuron where $\sum = \langle\omega_{j},
x\rangle  + b_{j}.$

\begin{center}
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\vspace{0.5cm}
\includegraphics[scale=1.2]{cutmypic.png}
\end{center}
\vspace{0.5cm}
Figure 1: source: andrewjamesturner.co.uk
\vspace{0.5cm}
The Figure 2 represents the activation function described above.

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