1819-108-C1-W10

ints murans

April 2019

1 Introduction

- The sigmoid function(or logistic)

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

- 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

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

- The Rectified Linear Unit (ReLU) activation function

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

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

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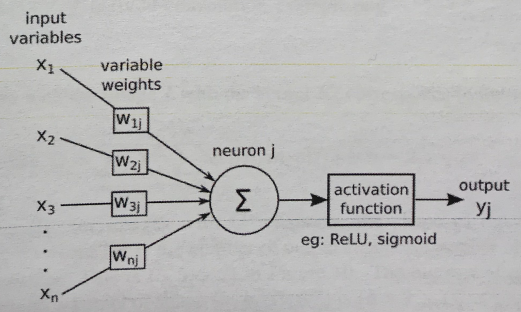

Figure 1: source: andrewjames turner.co.uk

The Figure 2 represents the activation function described above.

```
    \documentclass{article}
\usepackage[utf8]{inputenc}
\usepackage{graphicx}
\title{1819-108-C1-W10}
\author{ints murans}
\date{April 2019}

\begin{document}

\maketitle

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

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\begin{verbatim}
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