1819-108-C1-W11-CW

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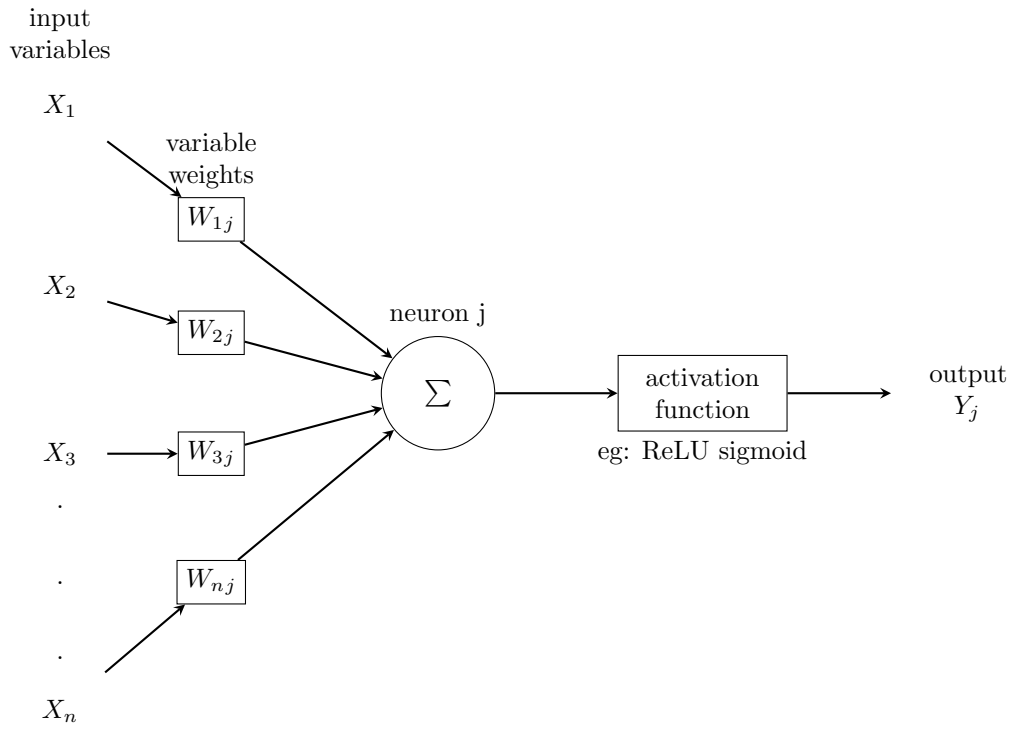
April 2019




```
\usepackage{incgraph,tikz}
\usetikzlibrary{shapes.geometric}
\usetikzlibrary{arrows,automata}
\usetikzlibrary{positioning}

\tikzstyle{arrow} = [thick,->,>=stealth]
\tikzstyle{1} = [circle, minimum width=0.5cm, minimum height=1.5cm, text centered,
draw=black]
\tikzstyle{2} = [rectangle, minimum width=1cm, minimum height=1cm, text centered,
text width=2cm, draw=black]
\tikzstyle{3} = [rectangle, minimum width=2cm, minimum height=1cm, text centered,
text width=1cm, draw=white]
\tikzstyle{41} = [rectangle, text centered, draw=black]
\tikzstyle{42} = [rectangle, text centered, draw=black]
\tikzstyle{43} = [rectangle, text centered, draw=black]
\tikzstyle{44} = [rectangle, text centered, draw=black]
\tikzstyle{51} = [rectangle, minimum width=1cm, minimum height=1cm, text centered,
text width=1cm]
\tikzstyle{52} = [rectangle, minimum width=1cm, minimum height=1cm, text centered,
text width=1cm]
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\tikzstyle{53} = [rectangle, minimum width=1cm, minimum height=1cm, text centered,
text width=1cm]
\tikzstyle{54} = [rectangle, minimum width=1cm, minimum height=1cm, text centered,
text width=1cm]
\tikzstyle{61} = [rectangle, minimum width=1cm, minimum height=1cm, text centered,
text width=1cm]
\tikzstyle{62} = [rectangle, minimum width=1cm, minimum height=1cm, text centered,
text width=1cm]
\tikzstyle{63} = [rectangle, minimum width=1cm, minimum height=1cm, text centered,
text width=1cm]

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\begin{tikzpicture}[node distance=2cm]

\node (2) [2, label=below:eg: ReLU sigmoid] {activation \\ function};
\node (1) [1, label=above:neuron j,left of=2, xshift=-1.5cm] {$\sum$};
\node (3) [3, right of=2, xshift=1.5cm] {output \\ $Y_j$};

\node (41) [41, label={[align=center]variable\\weights}, left of=1, xshift=-1cm,
yshift=2.3cm] {$W_1_j$};
\node (42) [42, left of=1, xshift=-1cm, yshift=0.8cm] {$W_2_j$};
\node (43) [43, left of=1, xshift=-1cm, yshift=-0.8cm] {$W_3_j$};
\node (44) [44, left of=1, xshift=-1cm, yshift=-2.5cm] {$W_n_j$};

\node (51) [51, label={[align=center]input\\variables}, left of=41, yshift=1.5cm] {$X_1$};
\node (52) [52, left of=42, yshift=0.6cm] {$X_2$};
\node (53) [53, left of=43] {$X_3$};
\node (54) [54, left of=44, yshift=-1.7cm] {$X_n$};

\node (61) [61, left of=43, yshift=-0.7cm ] {.};
\node (62) [62, left of=43, yshift=-1.7cm ] {.};
\node (63) [63, left of=43, yshift=-2.7cm ] {.};

\draw [arrow] (1) -- (2);
\draw [arrow] (2) -- (3);

\draw [arrow] (41) -- (1);
\draw [arrow] (42) -- (1);
\draw [arrow] (43) -- (1);
\draw [arrow] (44) -- (1);

\draw [arrow] (51) -- (41);
\draw [arrow] (52) -- (42);
\draw [arrow] (53) -- (43);
\draw [arrow] (54) -- (44);
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\end{tikzpicture}
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