Figure 0.1: University Logo

Semi-Simple Sample Document

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Contents

1 Forms to Write Text

Normal text.

Text in bold (Ctrl + B)

Text in italic (Ctrl + I)

Text with a footnote[1]

This is a citation[3].

1.1 Enumerate and Itemize Information

1. Enumerate one
2. Enumerate two
   (a) Sub-enumerate one
   (b) Sub-enumerate two

- Item one
- Item two
  - Sub-item one
  - Sub-item two

1. Start enumeration at 0
2. Enumerate one

2 Spaces

Add space between   words.

Carbon monoxide (CO) is a colorless, odorless, and tasteless gas composed of one carbon atom and one oxygen atom. It is produced through incomplete combustion of carbon-containing fuels such as gasoline, natural gas, coal, wood, and oil. When these fuels do not burn completely due to insufficient oxygen supply, carbon monoxide is formed instead of carbon dioxide (CO_2).

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3 Equations

3.1 Simple Equations

$$E = mc^2 \tag{1}$$

$$f(x) = \begin{cases} 1 & \text{if } x > 0 \\ 0 & \text{if } x \leq 0 \end{cases} \tag{2}$$

[1] This is a footnote.

3.2 Complex Equations

$$\vec{h}_1 = f(\vec{x} \cdot W_1) \tag{3}$$
$$\vec{h}_2 = f(\vec{h}_1 \cdot W_2) \tag{4}$$
$$\vec{h}_3 = f(\vec{h}_2 \cdot W_3) \tag{5}$$
$$\vec{y} = f(\vec{h}_3 \cdot W_4) \tag{6}$$

$$\text{MSE} = \frac{1}{n}\sum_{i=1}^{n}(y_i - \hat{y}_i)^2 \tag{7}$$

$$\begin{pmatrix} a_0 & a_1 \\ a_2 & a_3 \end{pmatrix} \odot \begin{pmatrix} b_0 & b_1 \\ b_2 & b_3 \end{pmatrix} = \begin{pmatrix} a_0 \cdot b_0 & a_1 \cdot b_1 \\ a_2 \cdot b_2 & a_3 \cdot b_3 \end{pmatrix}$$

$$\frac{dL}{db_k} = \frac{dL}{dy_k}\frac{dy_k}{db_k} = \frac{dL}{dy_k}\frac{dy_k}{dz_k}\frac{dz_k}{db_k} = l'_{k+1} \odot f'_k \frac{d(W_k x_k + b_k)}{db_k}$$

3.2.1 Matrix

$$\text{IoU}(A, B) = \frac{|A \cap B|}{|A \cup B|} = \frac{|A \cap B|}{|A| + |B| - |A \cap B|} \tag{8}$$

4 Figures

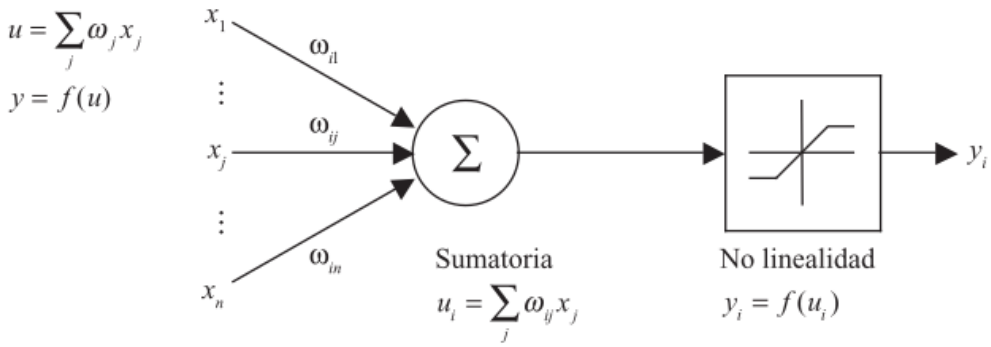
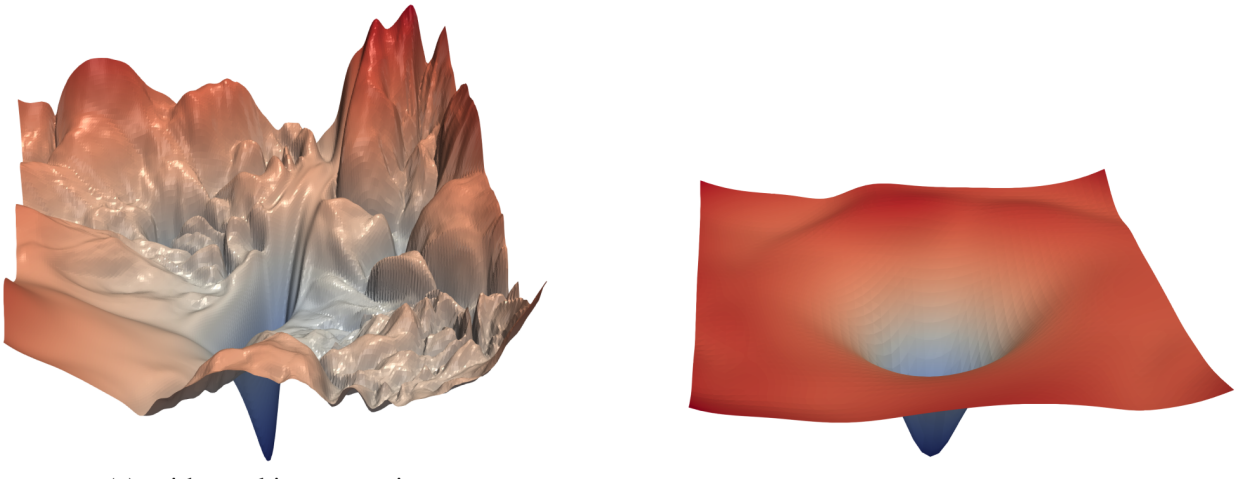


Figure 4.1: Perceptron diagram.

This is a reference for the image (Figure 4.1) above.



(a) Figure one.

(b) Figure two.

Figure 4.2: Both figures.

5 Tables

Data 1	185
Data 222	37
Data 333333	12
Data 4444444444	12
Data 555	13

Table 1: Table X.

	Number of people			Difference between	
Module	0	1	2	1 vs 0	2 vs 0
1	21.07	21.19	21.33	0.12	0.26
2	22.25	22.35	22.39	0.10	0.14
3	18.11	18.19	18.61	0.07	0.50
4	18.30	18.44	18.87	0.15	0.57
6	18.21	18.43	19.45	0.21	1.24

Table 2: Table Y.

6 Algorithm Example

Using the ‘algorithm‘ and ‘algorithmic‘ packages.

Algorithm 1 Example Algorithm: Binary Search

Require: Sorted array $A[1 \dots n]$, target value x
Ensure: Index of x in A, or -1 if not found
1: $low \leftarrow 1$
2: $high \leftarrow n$
3: **while** $low \leq high$ **do**
4: $mid \leftarrow \lfloor (low + high)/2 \rfloor$
5: **if** $A[mid] = x$ **then**
6: **return** mid
7: **else if** $A[mid] < x$ **then**
8: $low \leftarrow mid + 1$
9: **else**
10: $high \leftarrow mid - 1$
11: **end if**
12: **end while**
13: **return** -1

Appendices

A First Appendix

This is an appendix.

B Second Appendix

Text.

References

[1] Iván Federico Kwist, Matías Loiseau, David Exequiel Contreras, Federico Gabriel D'Angiolo, Roberto Osvaldo Mayer. (2019). *Monitorización de un Datacenter mediante Protocolos de IoT*. Congreso Nacional de Ingeniería Informática – Sistemas de Información.

[2] Federico Gabriel D'Angiolo, Iván Federico Kwist, Matías Loiseau, David Exequiel Contreras, Fernando Asteasuain. (2019). *Algoritmos de Regresión Lineal aplicados al mantenimiento de un Datacenter*. Congreso Argentino de Ciencias de la Computación.

[3] Federico Gabriel D'Angiolo, Iván Federico Kwist, Matías Loiseau, David Exequiel Contreras, Gregorio Oscar Glas. (2019). *Algoritmo de KNN aplicado al mantenimiento de un Datacenter*. Congreso Nacional de Ingeniería Informática – Sistemas de Información.

[4] LeCun, Y., Bengio, Y., & Hinton, G. (2015). *Deep learning*. Nature, 521(7553), 436-444.

[5] Zhao, Z. Q., Zheng, P., Xu, S. T., & Wu, X. (2019). *Object detection with deep learning: A review*. IEEE Transactions on Neural Networks and Learning Systems, 30(11), 3212-3232.