

# AI PROJECT

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**01** | **THE PROJECT**  
Works on document  
digitalization

**03** | **IMAGE PROCESSING**  
Deliverable 2

**02** | **BINARY CLASSIFICATION**  
Deliverable 1

**04** | **IMAGE CAPTIONING**  
Deliverable 3

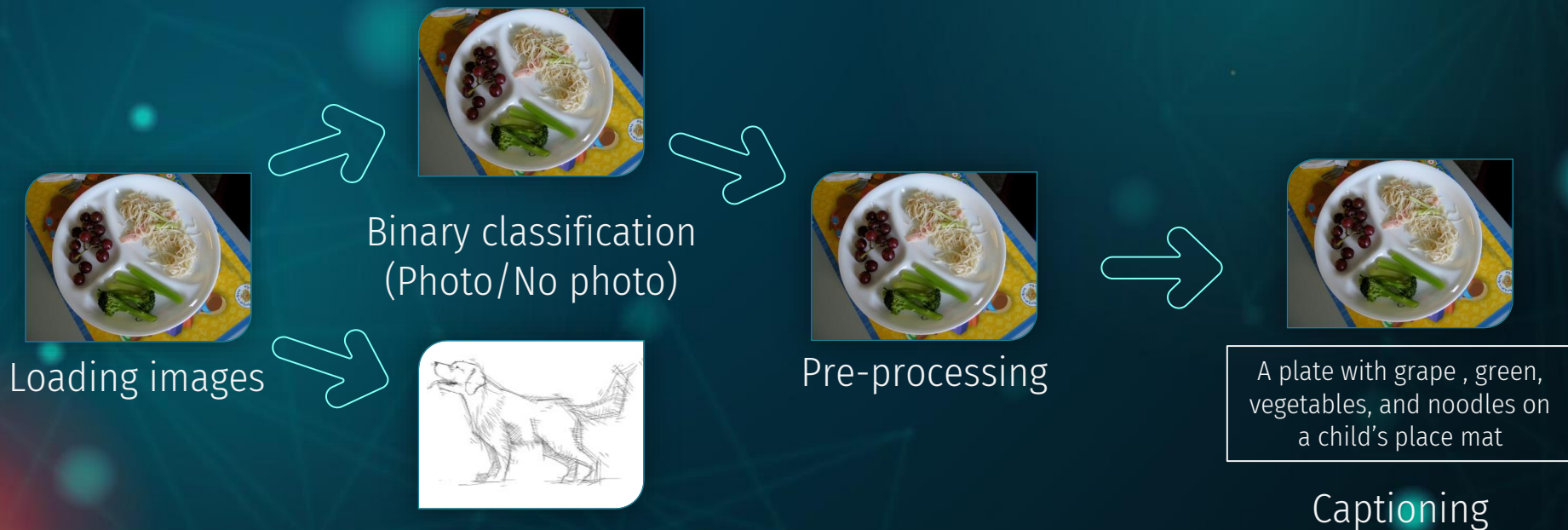
# THE PROJECT

# 01

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# THE PROJECT |

TouNum company request :

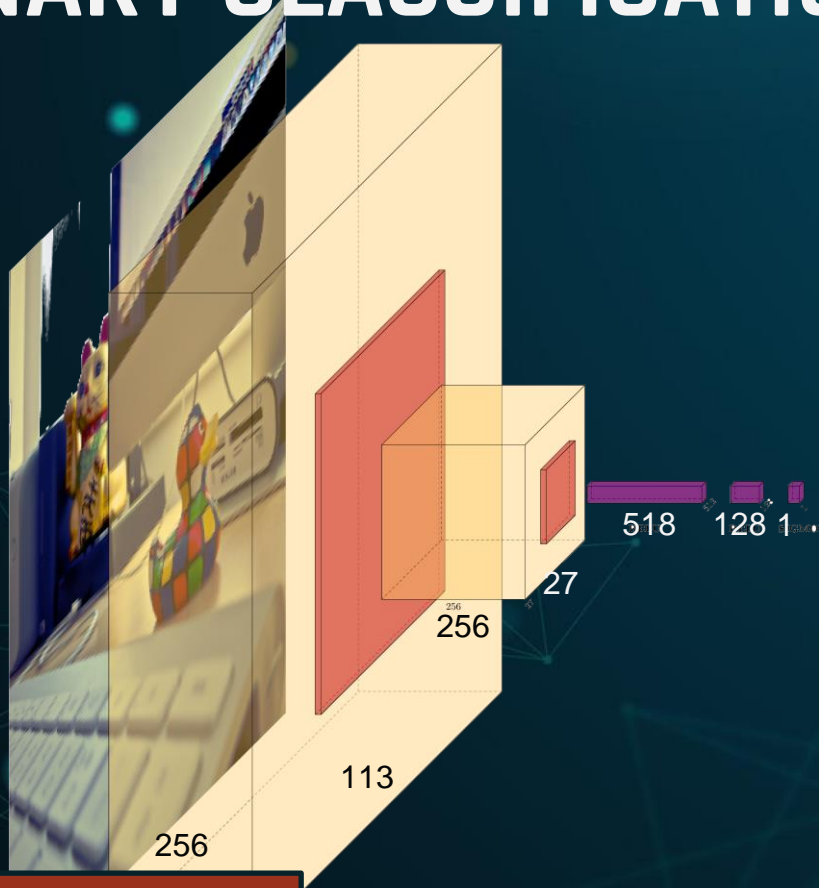


# **BINARY CLASSIFICATION**

# 02

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# BINARY CLASSIFICATION



2 Convolutions  
3 Denses

# Convolution

Pixels values

0.5	0.4	0.8	0.7	0.6	0
0.2	0.7	0.3	0.4	0.9	0.1
1	0.5	0.8	0.3	0.2	0.7
0.8	0.6	0.1	0.4	0.6	0.9
0.3	0.5	0.4	0.7	0.1	0.6
0.4	0.9	0.8	0.8	0.5	0.2

Kernel 3x3 Pixels

1	2	1
2	4	2
1	2	1

Convolved image

		7.7			

$$0.7 \times 1 = 0.7$$

$$0.3 \times 2 = 0.6$$

$$0.4 \times 1 = 0.4$$

$$0.5 \times 2 = 1$$

$$0.8 \times 4 = 3.2$$

$$0.3 \times 2 = 0.6$$

$$0.6 \times 1 = 0.6$$

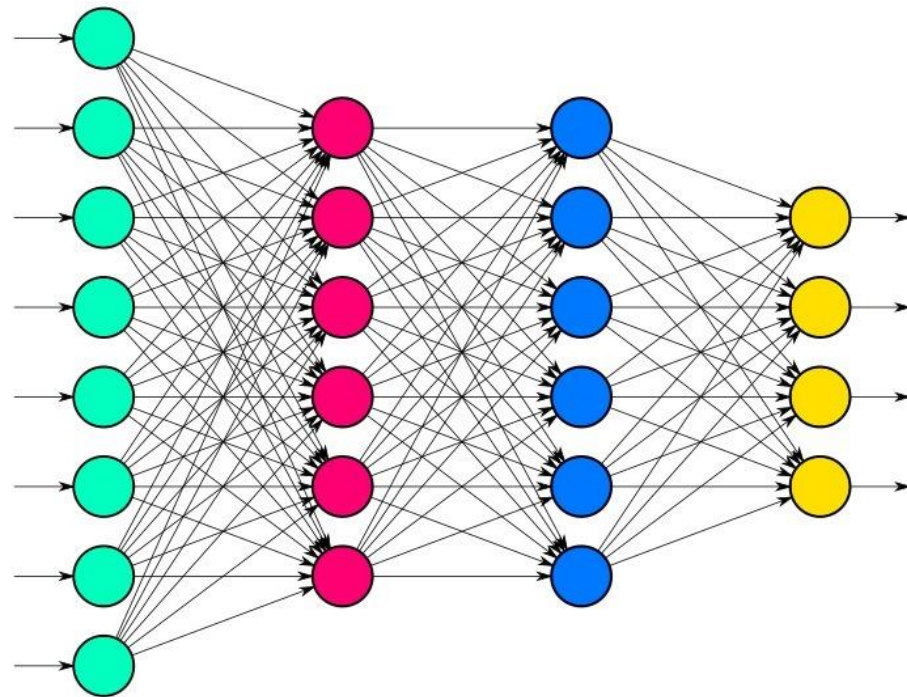
$$0.1 \times 2 = 0.2$$

$$0.4 \times 1 = 0.4$$

$$0.7 + 0.6 + 0.4 + 1 + 3.2 + 0.6 + 0.6 + 0.2 + 0.4 = 7.7$$

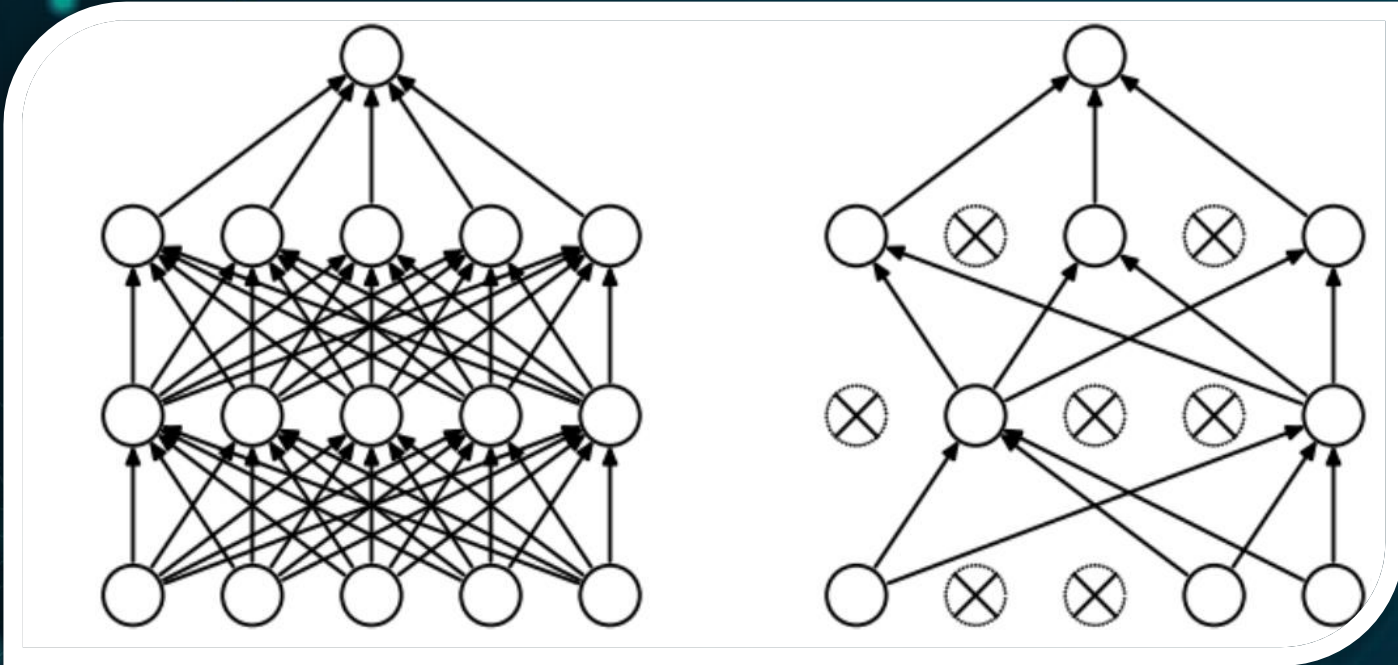


# Dense





# Dropout



# Evaluate



# Execute



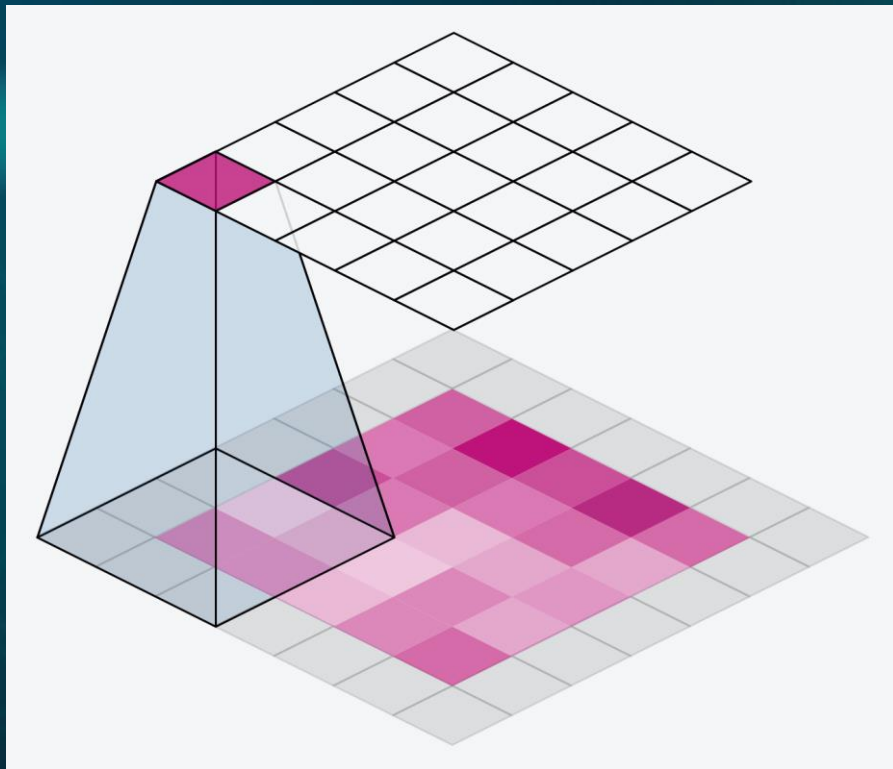
# IMAGE PROCESSING

# 03

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# IMAGE PROCESSING |

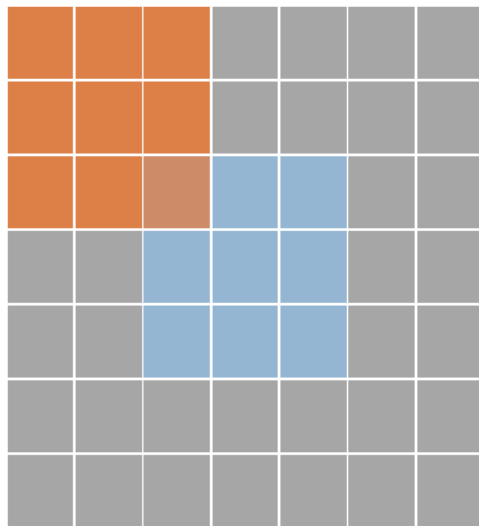
Max pooling



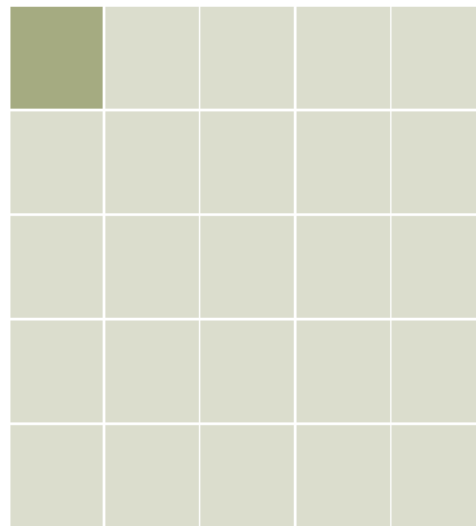
# IMAGE PROCESSING

## Transposed Convolution

Type: transposed conv - Stride: 1 Padding: 0



Input

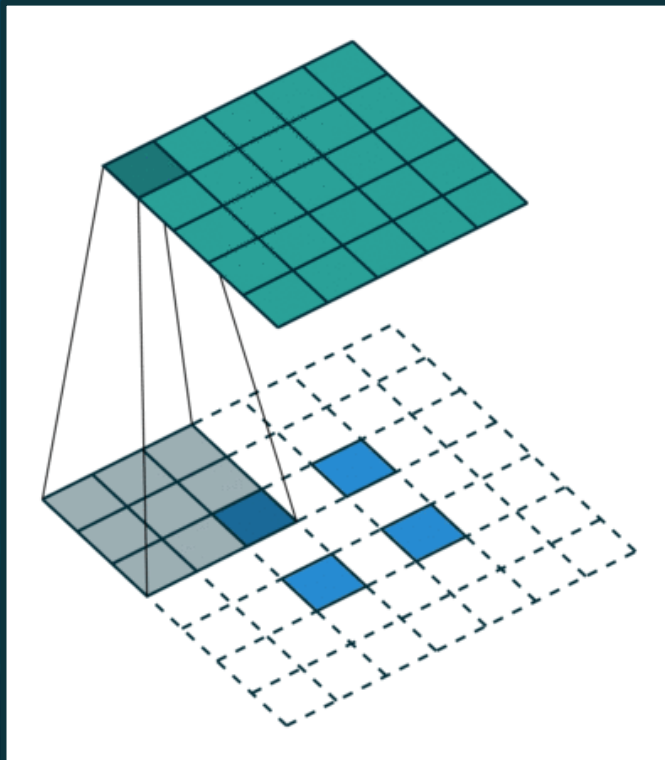


Output



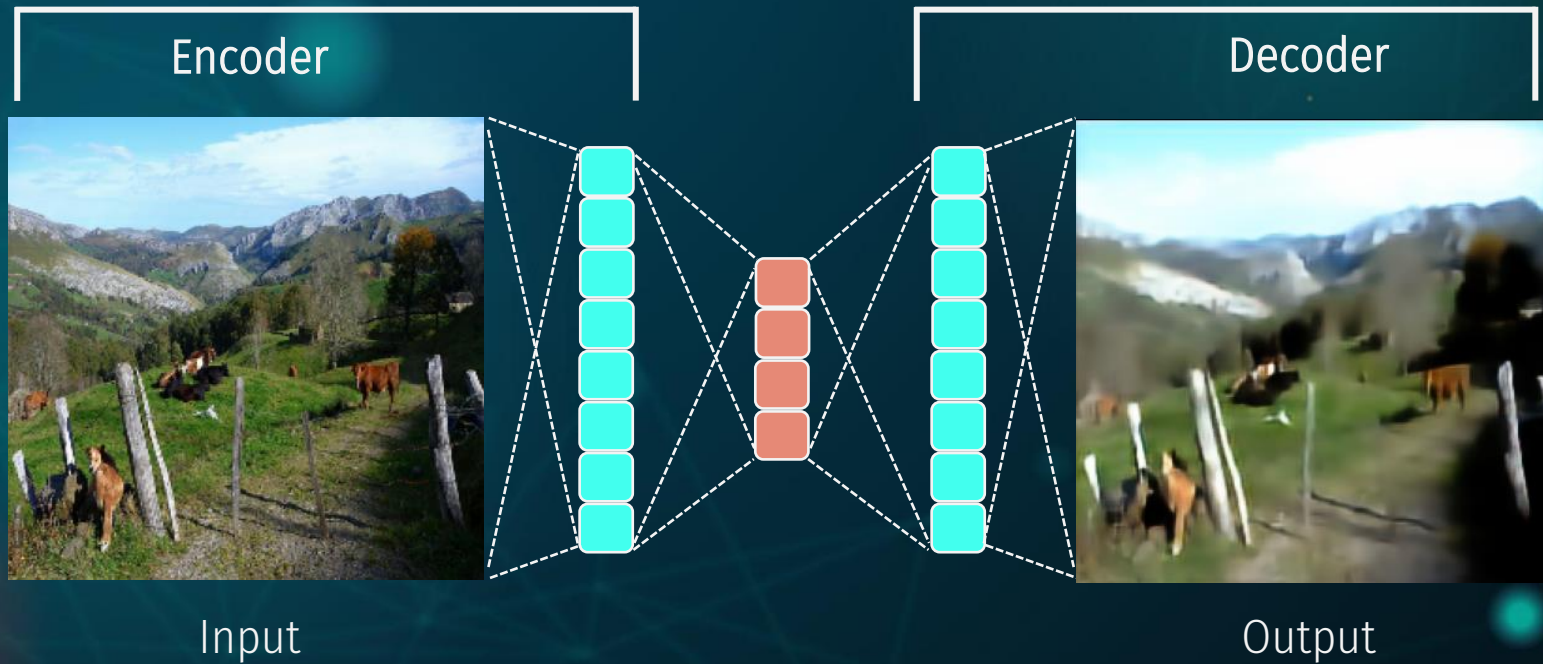
# IMAGE PROCESSING |

Up sampling

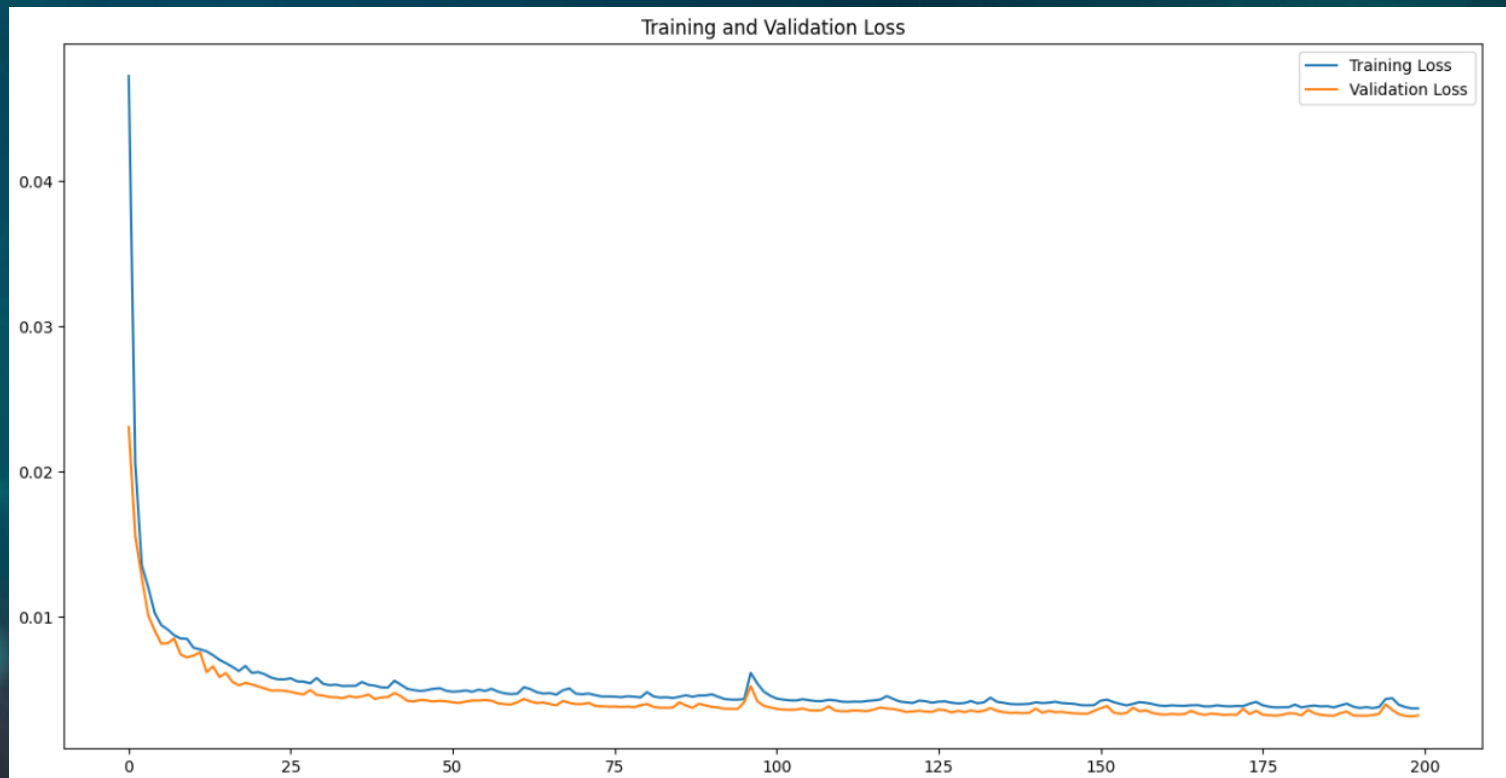


# IMAGE PROCESSING

Autoencoder :



# IMAGE PROCESSING

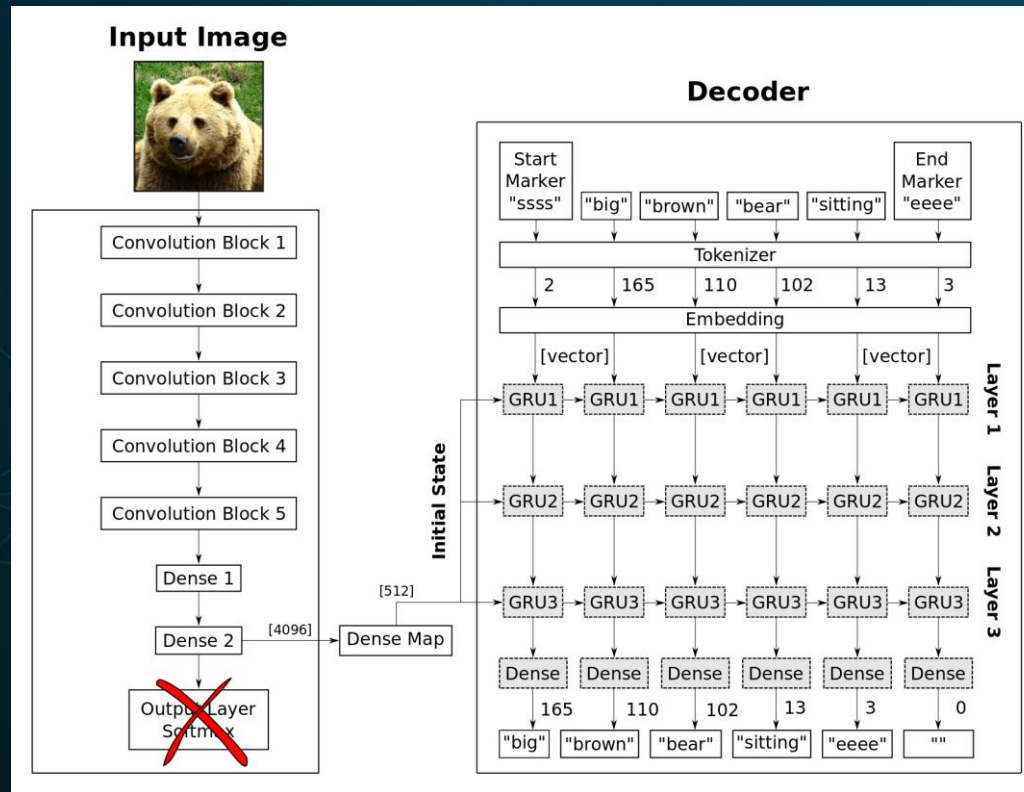


# IMAGE CAPTIONING

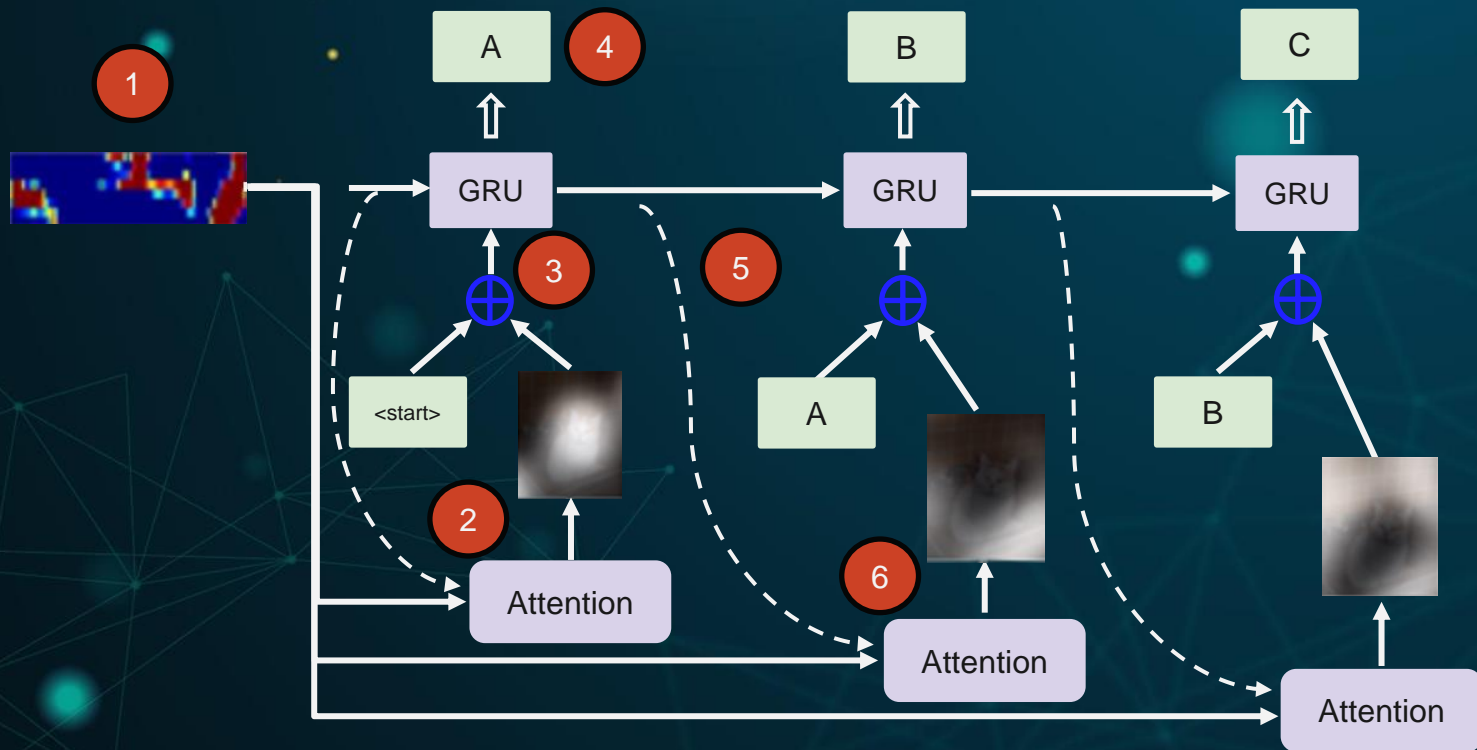
# 04

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# IMAGE CAPTIONING

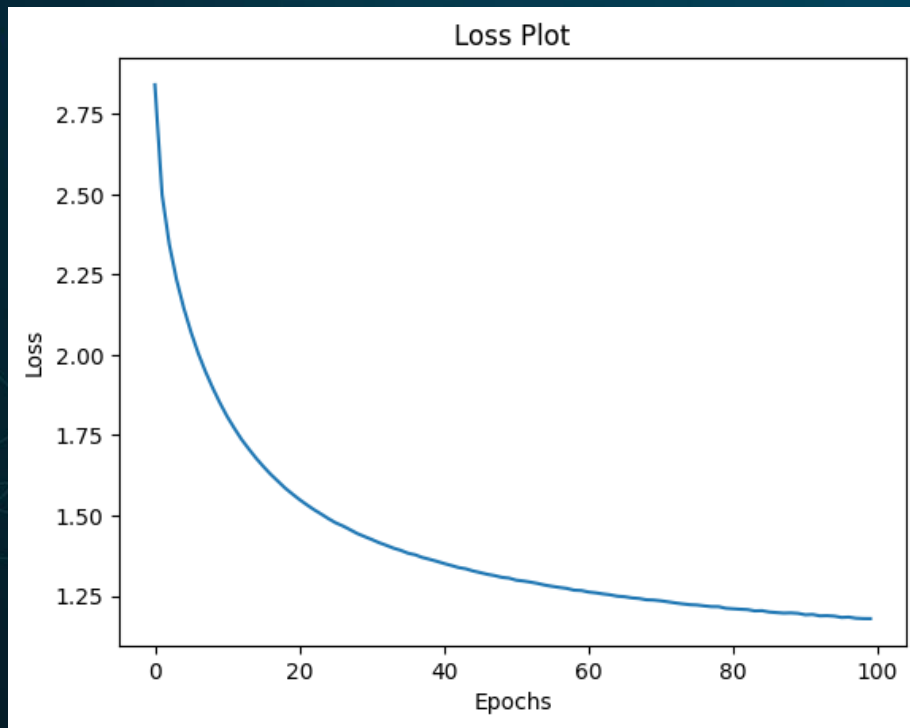


# IMAGE CAPTIONING

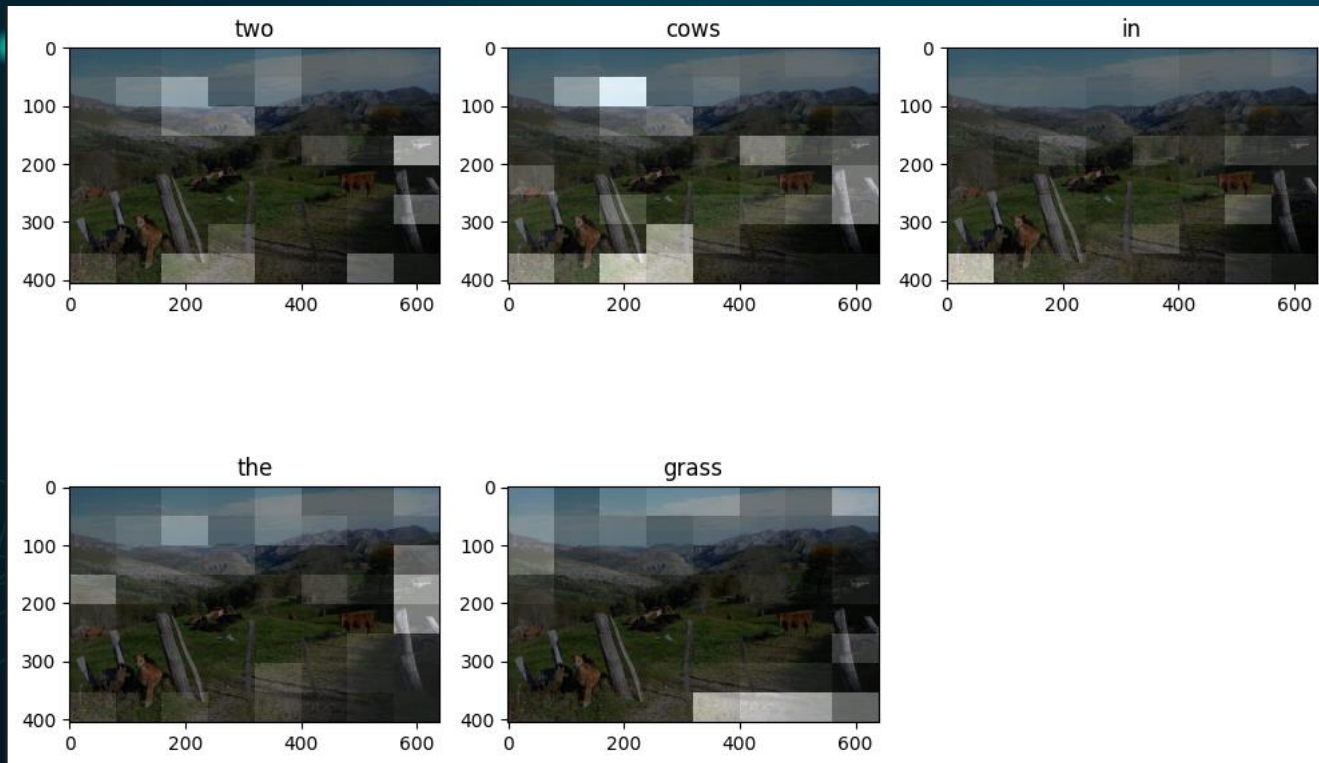




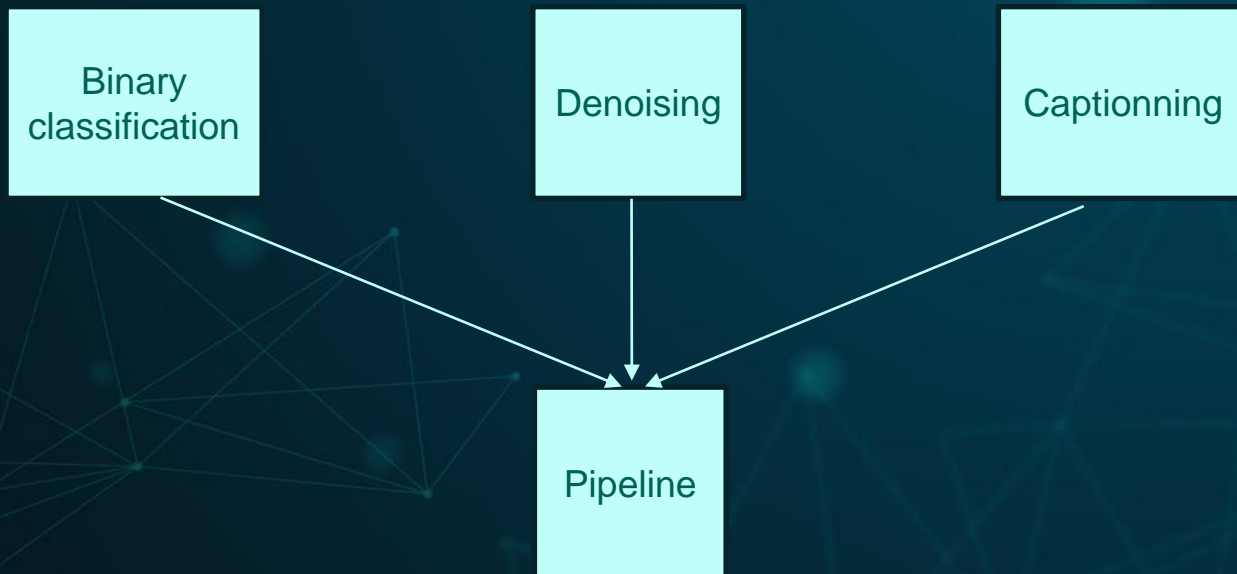
# IMAGE CAPTIONING



# IMAGE CAPTIONING



# CONCLUSION





**Thank you  
for your  
attention**