



**Compression Algorithm to  
reduce cows space  
consumption.**

# Team Presentation



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<https://github.com/jsjacomeb/STO245-003>

## Jäger bomb



## Ingredients

- Jägermeister
- Red Bull



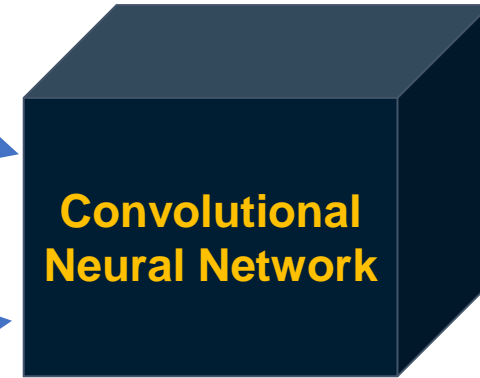
# Training Process



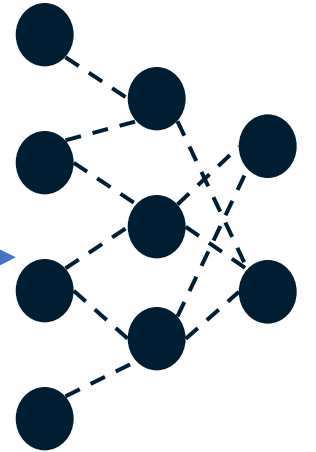
**Sick-Cattle Images**



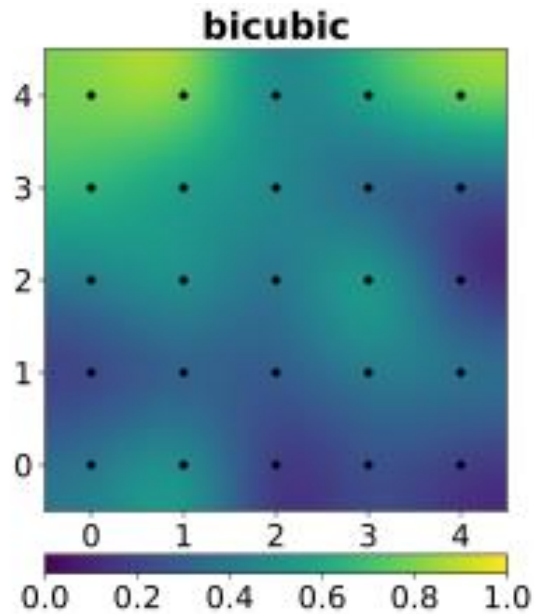
**Healthy-Cattle Images**



**Classification  
Algorithm**



**Classification  
Model**



10	20
30	40

2x2

2x

7	10	16	19
13	17	22	26
24	28	33	37
31	34	40	43

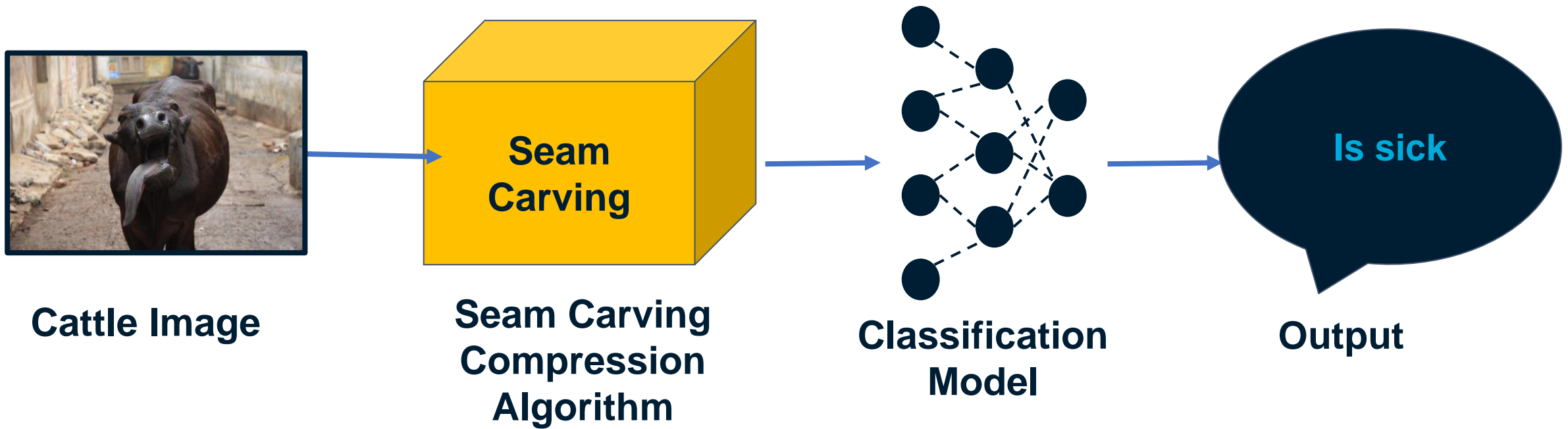
4x4

$$p(x, y) = \sum_{i=0}^3 \sum_{j=0}^3 a_{ij} x^i y^j.$$

Bicubic interpolation which is an extension of the cubic interpolation which interpolated Surface is smoother than the ones from the bilinear or nearest-neighbor



Family Guy (tenth season, chapter 11)



# Compression Algorithm Design

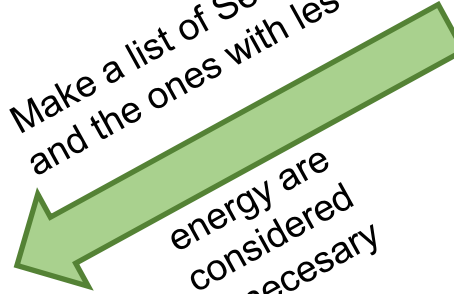


Calculate the  
weight/density/energy of each  
pixel



4	8	31	5	6	32
1	5	4	8	1	3
2	1	54	6	8	7

Make a list of Seam,  
and the ones with less  
energy are  
considered  
unnecessary



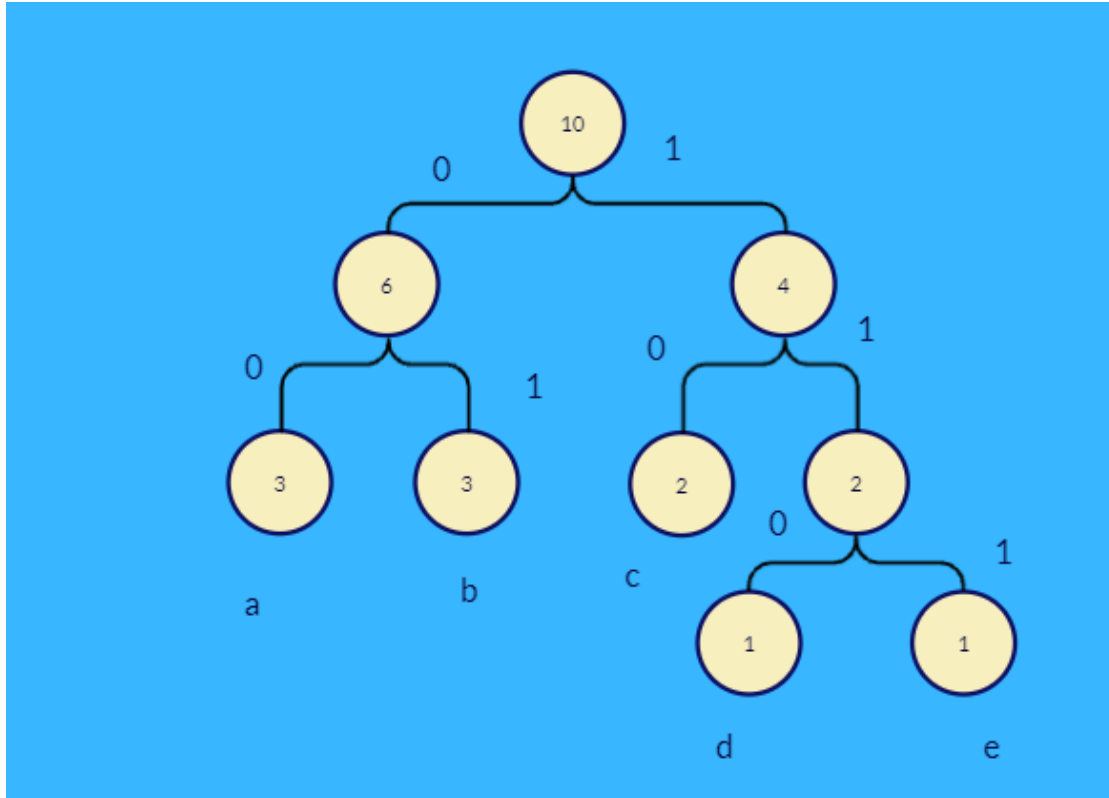
4	8	31	5	6	32
5	9	9	13	6	9
7	6	63	12	14	13

Remove the ones  
considered  
unnecessary





# Compression Algorithm Design



This is the Huffman coding that is going to be the lossless one, were the character's frequency is the tree's frequency.



# Compression Algorithm Complexity



	Time Complexity	Memory Complexity
Image Compression	$O(n\log(n))$	$O(n)$
Image Decompression	$O(n\log(n))$	$O(n)$

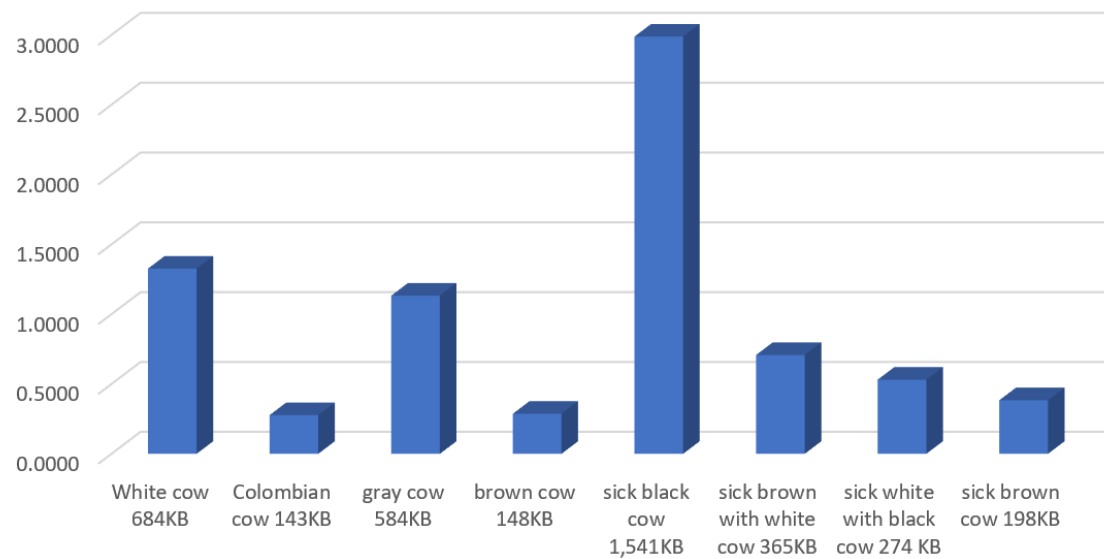
Time and Memory complexity of Huffman



# Time and Memory Consumption

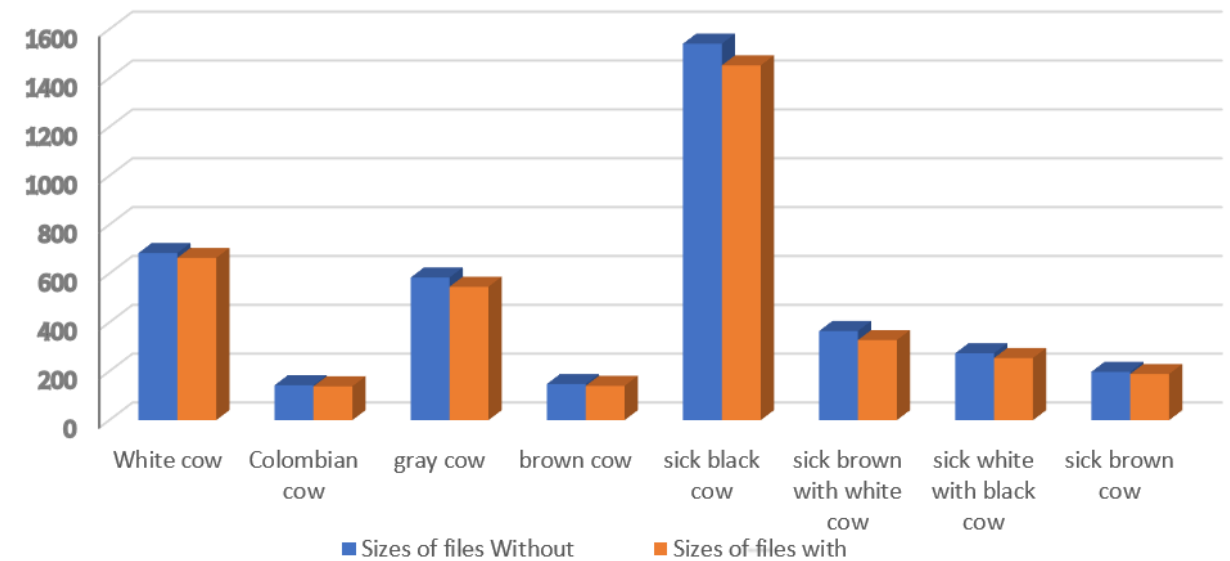


Time consumption (s)



Time Consumption

image size (KB)



Memory Consumption

# Average Compression Ratio



	Compression Ratio
Healthy Cattle	31: 625
Sick Cattle	349:5000


Average compression ratio for Healthy Cattle and Sick Cattle.







J. Jácome-Burbano, D. Cuadros-Mariño, and M. Toro. Compression algorithm to reduce cows space consumption. OSF.io, Nov. 2021. Available at: [https://osf.io/c45ue/?view\\_only=0fe0b6b1ccc340f49ce7e8e1d9fb66fe](https://osf.io/c45ue/?view_only=0fe0b6b1ccc340f49ce7e8e1d9fb66fe)

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Date created: 2021-11-18 12:31 PM | Last Updated: 2021-11-18 01:54 PM

Identifier: DOI 10.17605/OSF.IO/C45UE

Category: Project

Description: The Precision Livestock Farming (PLF) which improves the process of the livestock farming

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Juan Sebastián Jácome Burbano edited description of Compression Algorithm to reduce cows space consumption2021-11-18 12:56 PM

Juan Sebastián Jácome Burbano added Mauricio Toro as contributor(s) to



**THANK YOU!**