

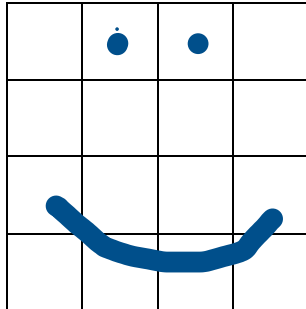


Digital Mirror

Am I friend or foe?

How does a Computer See

Sketch a **Happy** face



Write a **Happy** face as 0 and 1s

0	1	1	0
0	0	0	0
1	0	0	1
0	1	1	0

Comparing the same face using maths

Happy

0	1	1	0
0	0	0	0
1	0	0	1
0	1	1	0



Happy

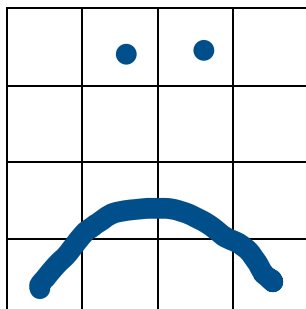
0	1	1	0
0	0	0	0
1	0	0	1
0	1	1	0



0	1	1	0
0	0	0	0
1	0	0	1
0	1	1	0

So what does $Happy \times Happy =$

Sketch a sad face



Write a sad face as numbers

0	1	1	0
0	0	0	0
1	0	0	1
0	1	1	0

Sad					Sad								
0	1	1	0		0	1	1	0		0	1	1	0
0	0	0	0		0	0	0	0		0	0	0	0
0	1	1	0		0	1	1	0		0	1	1	0
1	0	0	1		1	0	0	1		1	0	0	1

Comparing the same face using maths

The diagram illustrates the multiplication of two 4x4 matrices. The first matrix, labeled "Happy", has the following values:

0	1	1	0
0	0	0	0
1	0	0	1
0	1	1	0

The second matrix, labeled "Sad", has the following values:

0	1	1	0
0	0	0	0
0	1	1	0
1	0	0	1

A large blue "X" is placed between the two matrices, indicating multiplication. To the right of the "Sad" matrix is an equals sign, followed by a 4x4 matrix of all zeros, representing the result of the multiplication.

Happy, sad and Delighted

0	1	1	0
0	0	0	0
1	1	1	1
0	1	1	0

Happy	6	6	2
Delighted	6	8	4
Sad	2	4	6
	Happy	Delighted	Sad