Mnist Y SVM

Profesor: Víctor Viera Balanta

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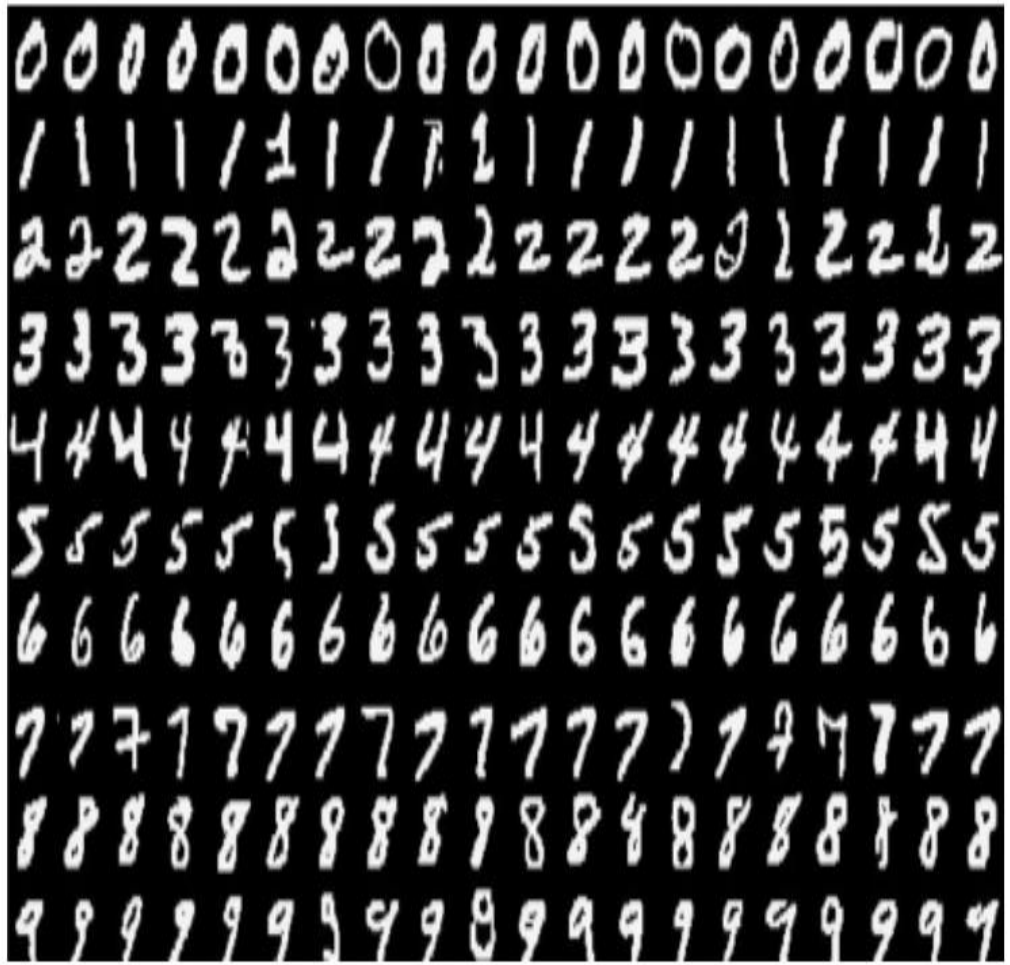

Creado en 1994, con imágenes de dígitos entre 0 y 9, escritos a mano.

60,000 imágenes entrenamiento
10,000 imágenes de prueba.

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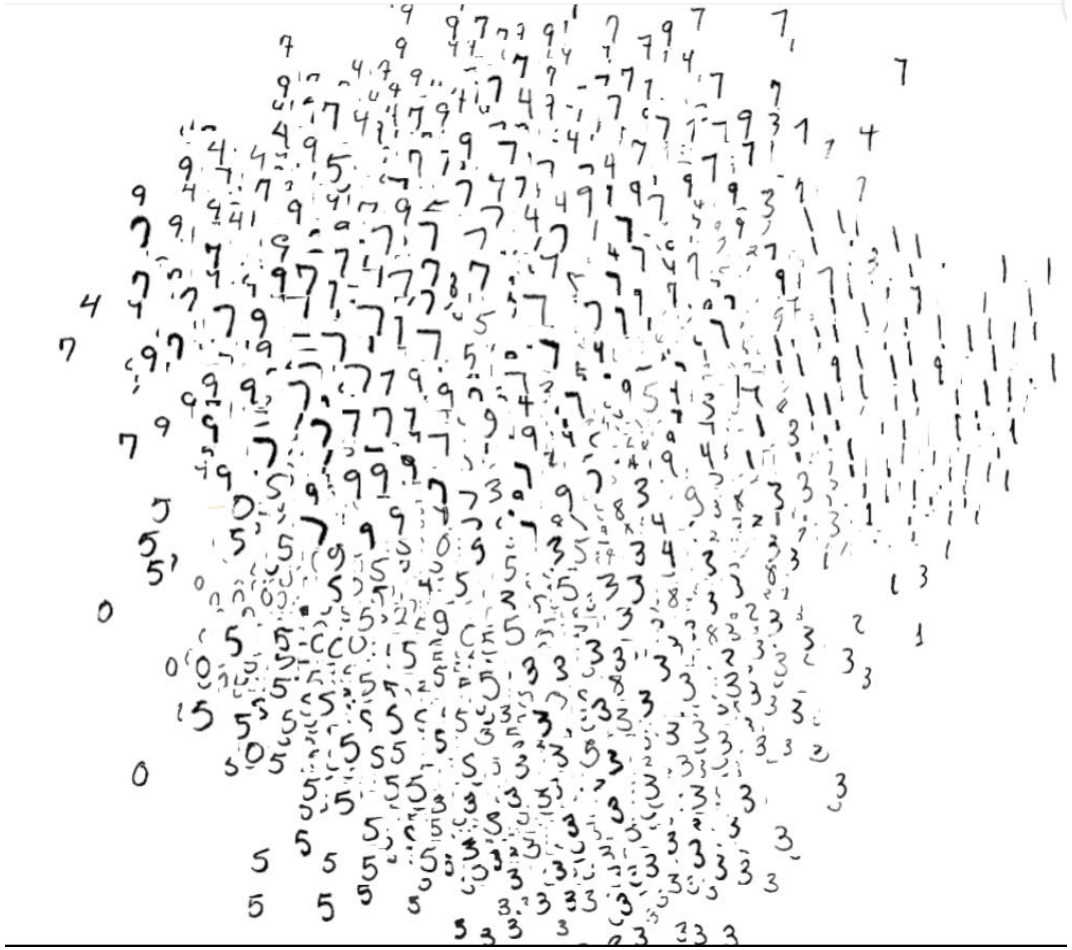

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https://projector.tensorflow.org/

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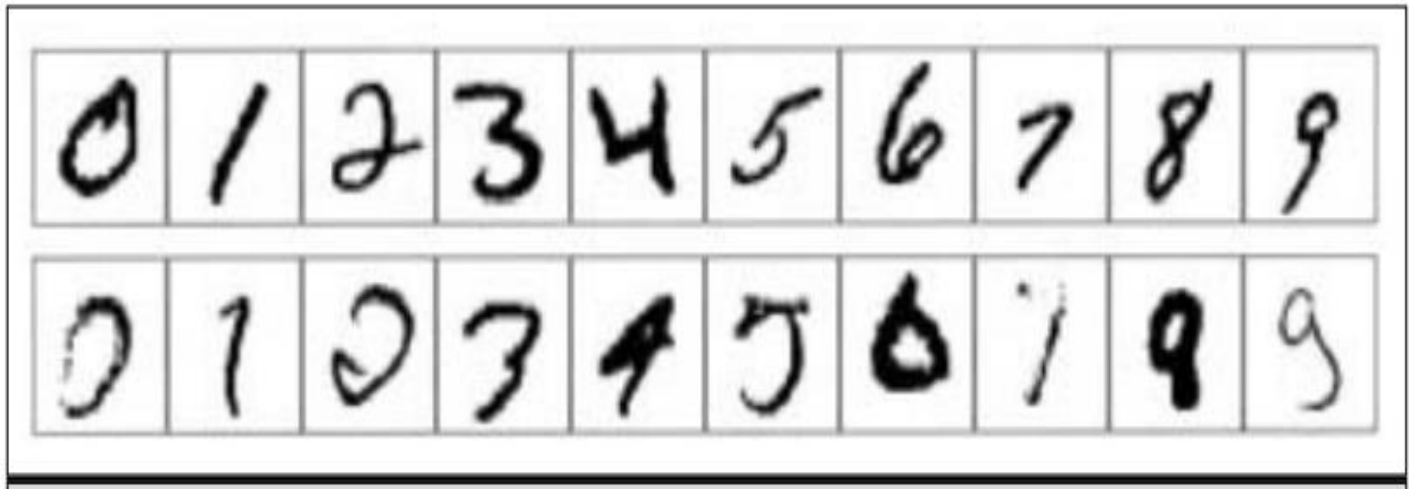
Dígitos escritos por estudiantes de secundaria y empleados y la ofician del censo de Estados unidos.



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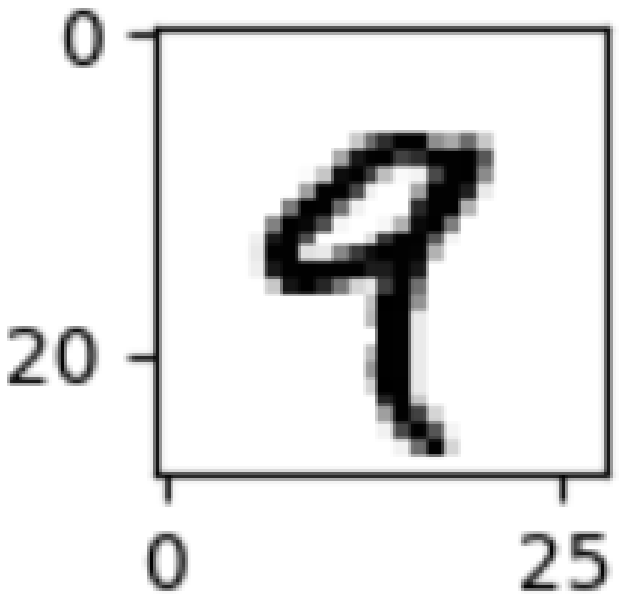

Escala de 20 x 20 = 400 pixeles

Escala de grises de 9 bits

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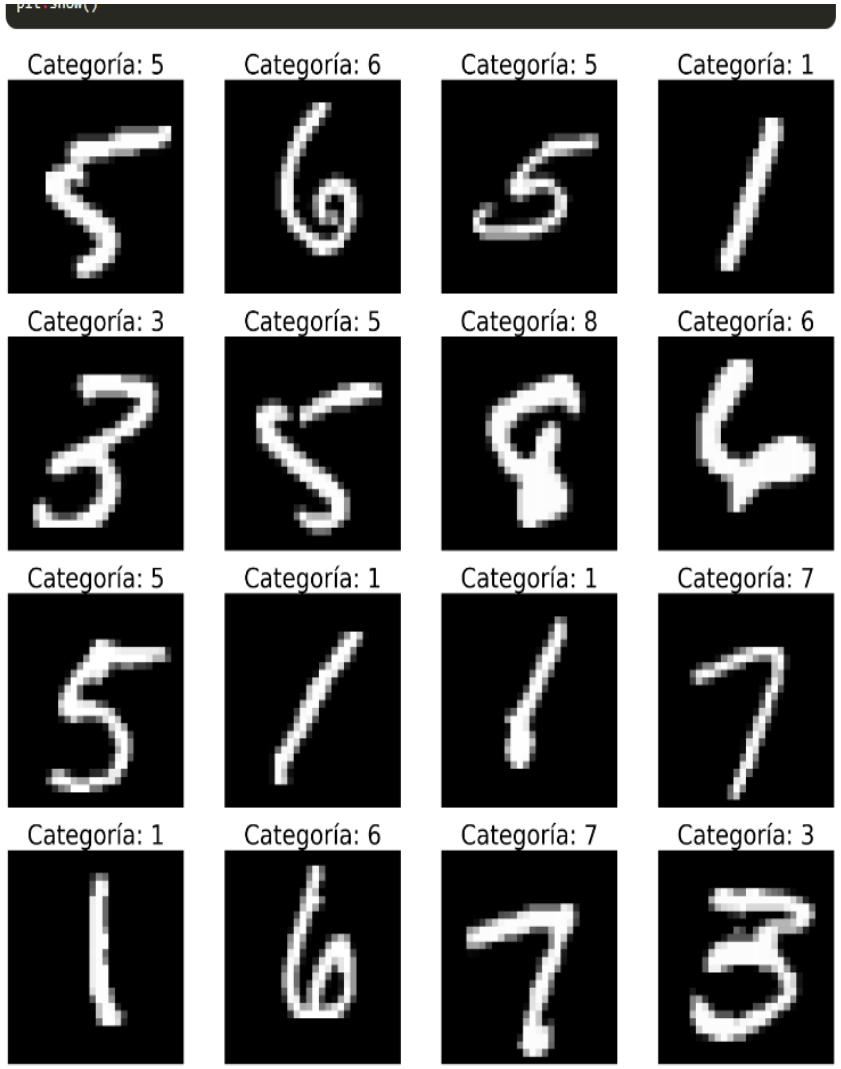

Usada en muchas trabajos científicos.

Para medir la exactitud y precisión de modelos de Machine Learning.

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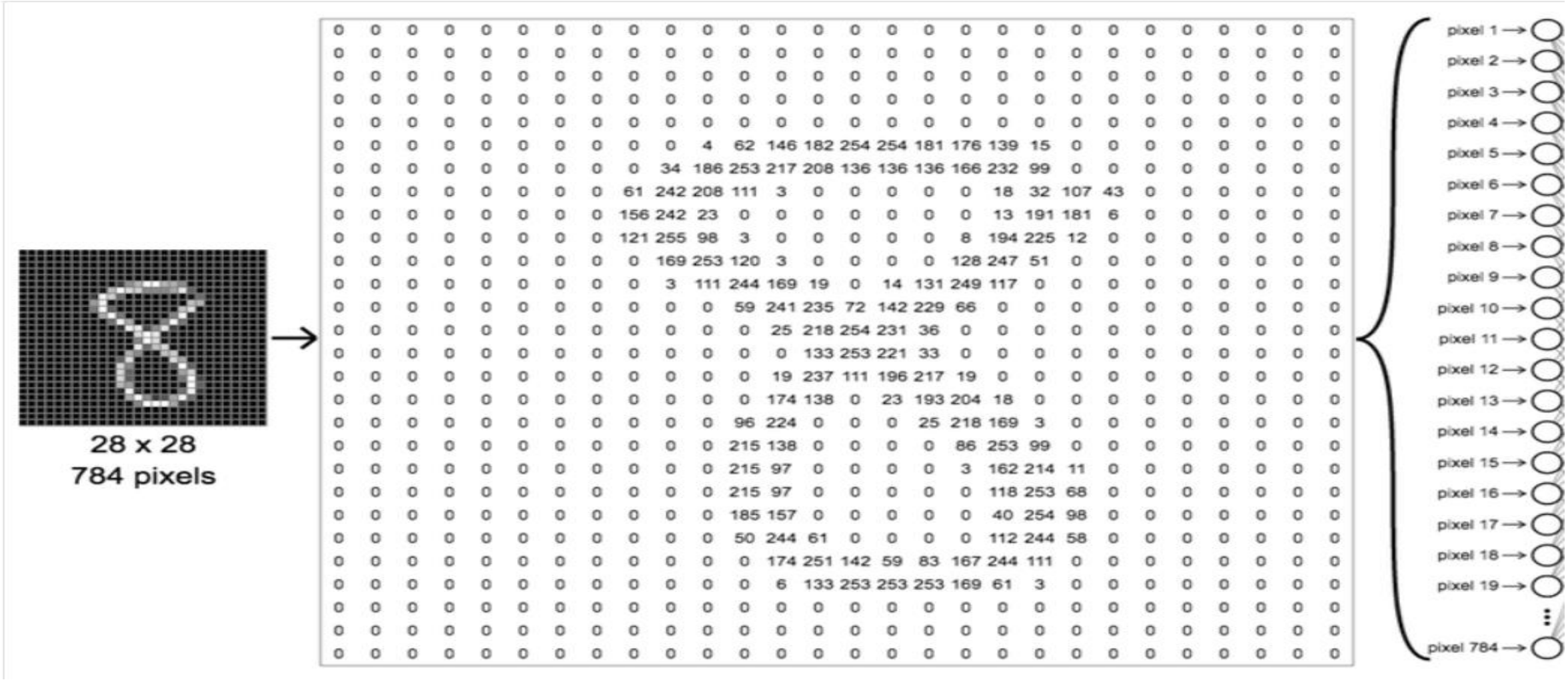

https://ml4a.github.io/ml4a/es/neural_networks/

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```
[2]  #importa los datasets
     from sklearn import datasets
```

```
     #se cargan el dataset de digitos
     digits = datasets.load_digits()
     digits.data
```

```
array([[ 0.,  0.,  5., ...,  0.,  0.,  0.],
       [ 0.,  0.,  0., ..., 10.,  0.,  0.],
       [ 0.,  0.,  0., ..., 16.,  9.,  0.],
       ...,
       [ 0.,  0.,  1., ...,  6.,  0.,  0.],
       [ 0.,  0.,  2., ..., 12.,  0.,  0.],
       [ 0.,  0., 10., ..., 12.,  1.,  0.]])
```

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```
digits.target
```

```
array([0, 1, 2, ..., 8, 9, 8])
```

```
digits.data.shape
```

```
(1797, 64)
```

```
digits.target.shape
```

```
(1797,)
```

This generates an input matrix of 8x8 where each element is an integer in the range 0..16. This reduces dimensionality and gives invariance to small distortions.

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```
train_images =datasets.load_digits()
train_images.data
train_images.target
```

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Víctor Viera Balanta

Máquinas de Soporte Vectorial (SVM)

Gracias

https://dai.fmph.uniba.sk/courses/NN/haykin.neural-networks.3ed.2009.pdf