



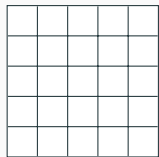
浙江大学爱丁堡大学联合学院

ZJU-UoE Institute

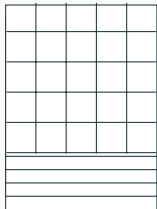
Lecture 10 - Machine learning in image analysis - coding session

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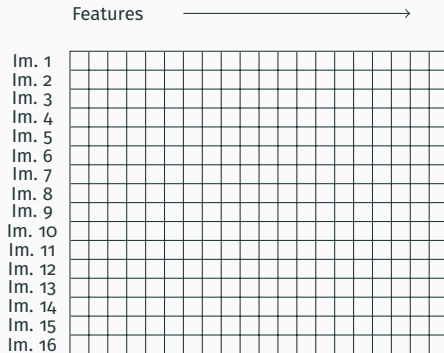
The general process



Image



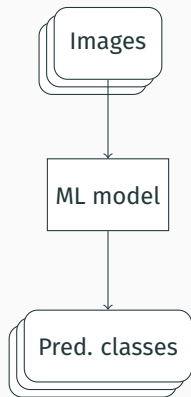
Features
(Intensity, Edges, texture, ...)



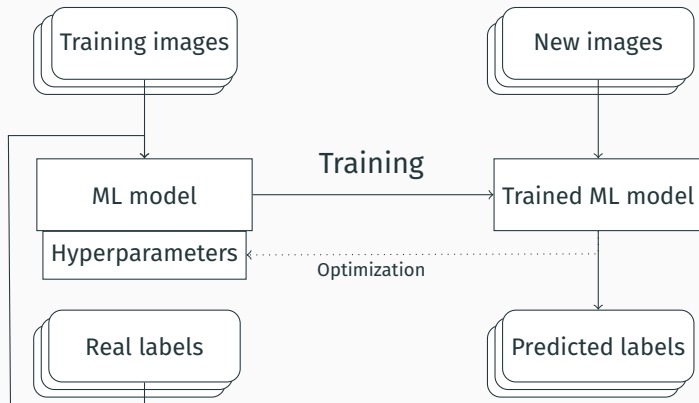
Unwrap
(and feed to model!)

Supervised vs unsupervised ML

Unsupervised



Supervised

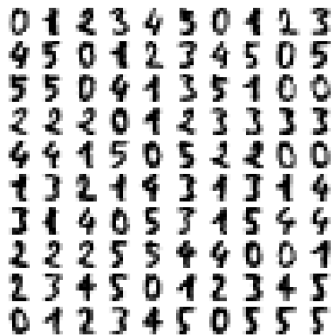


Let's try it out!

Today we will use both supervised and unsupervised methods to classify handwritten digits.

We are going to use the UCI digits dataset, by E. Alpaydin and C. Kaynak, containing 1797 8x8 images of handwritten digits from 0 to 9.

It's a simple yet large dataset useful for quick image analysis tests!



A 10x10 grid of handwritten digits, showing various styles and orientations. The digits are arranged in 10 rows and 10 columns. The digits are: Row 1: 0, 1, 2, 3, 4, 5, 0, 1, 2, 3; Row 2: 4, 5, 0, 1, 2, 3, 4, 5, 0, 5; Row 3: 5, 5, 0, 4, 1, 3, 5, 1, 0, 0; Row 4: 2, 2, 2, 0, 1, 2, 3, 3, 3, 3; Row 5: 4, 4, 1, 5, 0, 5, 2, 2, 0, 0; Row 6: 1, 3, 2, 1, 4, 3, 1, 3, 1, 4; Row 7: 3, 1, 4, 0, 5, 3, 1, 5, 4, 4; Row 8: 2, 2, 2, 5, 5, 4, 4, 0, 0, 1; Row 9: 2, 3, 4, 5, 0, 1, 2, 3, 4, 5; Row 10: 0, 1, 2, 3, 4, 5, 0, 5, 5, 5.