

# MUV-AMLCV 45350082122 - Aprendizaxe Automática Avanzada para Visión por Computador - Máster Universitario en Visión por Computador

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## Lab practice 2 (10%)

### Warmup

1. Follow the tutorials and explore the provided materials for the lab practice ([P2 Materials](#))
2. Get familiarized with the PyTorch documentation

### Exercise 1 - MNIST classification

1. Modify a pretrained network from [torchvision.models](#) preserving most of its weights.
2. Refine the network with and without data augmentation (2 models).
3. Train the same network from scratch, with randomly initialized weights, with and without data augmentation (2 models).
4. Evaluate the classification accuracy of the four options.

### Exercise 2 - MNIST segmentation

1. Implement an U-Net network as described in reference [1] using a PyTorch nn.Module subclass.
2. Train and test the U-Net on the custom SegmentationMNIST dataset provided in the materials.
3. Present segmentation result examples from the test set.
4. (Optional) Present the following results. This will compensate for mistakes in other parts of the assignment.
  1. Confusion matrix on the test set
  2. ROC curves for each class against the others on the test set

### Deadlines

- **Early deadline:** May 3rd 23:59 (Spain time)
- **Late deadline (with penalization):** May 10th 23:59 (Spain time)
  - This option will penalize the lab practice grade by multiplying it by 0.8
  - If the optional parts are presented, there is no penalization

### References

[1] O. Ronneberger, P. Fischer, T. Brox, *U-Net: Convolutional Networks for Biomedical Image Segmentation*, MICCAI 2015.  
<https://arxiv.org/abs/1505.04597>

## Estado de la entrega

<b>Estado de la entrega</b>	No entregado
<b>Estado de la calificación</b>	Sin calificar
<b>Fecha de entrega</b>	martes, 10 de mayo de 2022, 23:59
<b>Tiempo restante</b>	31 días 7 horas
<b>Última modificación</b>	-
<b>Comentarios de la entrega</b>	► <a href="#">Comentarios (0)</a>

Agregar entrega

Todavía no has realizado una entrega.

◀ P2 Materials

Ir a...

Questions and answers - Lab practice 2 ▶

Usted se ha identificado como Pablo García Fernández (Cerrar sesión)  
MUVC-AMLCV 45350082122

- Alumnado
- Guía de inicio

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