**Deep Learning and Generative Models**

**Project assignment #11**

**Project objective**:

* One shot learning with Cifar100 dataset

**Dataset**:

* cifar100 dataset (<https://pytorch.org/vision/stable/generated/torchvision.datasets.CIFAR100.html>)

**Network model**:

* A CNN for image classification can be used for this task. Experiment with a custom one or finetuning a pretrained model (like resnet18)

**Detailed information**:

* train a classification model on a subset of classes (e.g. 90). Instead of classifying the different classes, train the model to determine if two images have the same class.
* Training such a model can be seen as a binary classification problem (0: different class, 1: same class)
* Then select the remaining classes and take only 1 element for each classes (support set) and the rest as queries. The objective is to classify correctly the queries comparing them with the support set.

**Additional notes**:

* Learn more about the task here: <https://www.analyticsvidhya.com/blog/2021/05/an-introduction-to-few-shot-learning/>
* Experiment with splitting the dataset in different ways (90-10, 80-20, 50-50 ecc)