Problem Statement

Implementing "Learning Deep Feature Representations with Domain Guided Dropout for Person Re-identification"

Description

The paper introduces "Domain Guided Dropout" which drops off activations based on domain specific masks. The goal is to implement this for MNIST dataset. Specifically:

1. Create a CNN model and initialise it randomly. We'll use this model to get the dropout mask instead of a pretrained model. There should be a fixed size feature (**ff**) obtained after all the convolution layers using global pooling or a similar method. We'll dropout these activations in the training.
2. Get s_i of Equation (4) using this model on MNIST train dataset for the activations of **ff** layer.
3. Get the dropout masks m_i from equation (5).
4. Use the masks to implement the dropout of the activations of **ff** layer.
5. Train the model on MNIST train dataset with and without this layer, and report test set performance.

Deliverables

- Source code for implementation in a github repo
- Test set performances mentioned in description
- Script to evaluate both the models along with weights (with and without dropout implementation)

Make any assumptions needed to complete the assignment on time

Things we will judge you on (in order of importance):

- Finishing the assignment on time (~4 hours)
- Correctness of implementation
- Code quality