

046211 - Deep Learning - Project Proposal Template

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Project Name: Paper implementation: "Deep metric learning using Triplet network"

Short Description/Plan: In this project, we are going to implement the paper "Deep metric learning using Triplet network". Using the method demonstrated in the paper we hope to achieve high accuracy on a given training set under the setting of few-shot learning. The presented method will allow to unlock the true potential of dataset, while not adding any additional outside information. Our results will be evaluated on a dataset not experimented on by the authors of the original paper called Fashion MNIST.

Available Resources: We will use the following resources:

1. Paper: E.Hoffer, and N. Ailon, "Deep Metric Learning Using Triplet Network" ,ICLR, <https://arxiv.org/pdf/1412.6622> ,2015.
2. Paper: Y. Wang, and et.al , "Generalizing from a Few Examples: A Survey on Few-Shot Learning", arXiv: <https://arxiv.org/pdf/1904.05046> ,2020.
3. Github: <https://github.com/eladhoffer/TripletNet>.
4. Dataset: Fashion MNIST, <https://github.com/zalandoresearch/fashion-mnist> .

Does your project build upon previous projects? Yes, see links above. The previous project was implemented in the Lua programming language, we first hope to transfer the model to python where the models are implemented using modern PyTorch. Afterwards we will test our model on a dataset not tested by the authors called Fashion MNIST. Finally we want to examine our model under the few shot learning scenario.