**Loss functions in Re-ID models**

In this document, we will be study about several loss functions that frequently utilized in re-identification models.

**Triplet Loss**

Triplet loss is a way to teach a machine-learning model how to recognize the similarity or differences between items. It uses groups of three items, called triplets, which consist of an anchor item, a similar item (positive), and a dissimilar item (negative).

***Some resources:***

Papers with code: <https://paperswithcode.com/method/triplet-loss>

Blog-1: [v7labs](https://www.v7labs.com/blog/triplet-loss)

Blog-2: [Oliver Moindrot blog](https://www.v7labs.com/blog/triplet-loss)

Blog-3: [Advanced Intro](https://towardsdatascience.com/triplet-loss-advanced-intro-49a07b7d8905/)

**Papers:**

1. *FaceNet: A Unified Embedding for Face Recognition and Clustering (CVPR 2015)*
2. *Learning Deep Features for Discriminative Person Re-Identification (CVPR 2016)*
3. *In Defense of the Triplet Loss for Person Re-Identification (2017)*
4. *Beyond Triplet Loss: A Deep Quadruplet Network for Person Re-Identification (CVPR 2017)*

**Contrastive Loss** (Used in Siamese networks)

**Quadruplet Loss** (CVPR 2017)

**Center Loss** (ECCV 2016)

**Circle Loss** (CVPR 2020)

**Adaptive Weighted Triplet Loss (AWTL)**