Project Proposal Top-KAST: Top-K Always Sparse Training

Abstract: Highlight what parts of the project are particularly challenging and the main contribution of your assignment

* Group members: Lisa Wimmer, Sven Lorenz, Andreas Klaß
* Already defines the different building blocks that need to be implemented:
  + Block 1: K-means mit Levenshtein Distanz
  + Block 2: Hatching (Network Morphism/ Net2Net, whatever)
  + Block 3: Training von Mothernets und Hatchlings
* Clearly defines what requirements the final code must fulfill
  + Nur CNN’s (wir könnten das auch verallgemeinern)
  + Needs Cuda
  + Python 3.7+
  + Language: Pytorch
* Must define how the framework can and will be tested.
  + Compare to benchmarks of Paper (NOCH NACHSCHAUEN)
* What do we start with? Which code parts already exist?
  + Net2Net exists already
  + K-means with Levenshtein maybe already implemented
* Particularly challenging parts:
  + Hatching needs further research
  + Bei Verallgemeinerung: finding input/output schema that makes sense for a variety of architectures
* Main contribution:
  + Quicker ensemble training due to training MotherNets and then every ensemble network from the MotherNets leading to decreased training time.