

Setting Loss Weights

September 22, 2019

While studying research in image transformation using deep neural networks, I found that many works use losses which are linear combination of many terms. Assigning weights to these terms are very important, but I have no idea how to do it. The standard approach would be to change the weights, train, and evaluate the resulting networks on the validation set, but my models often take a long time to train, so this cannot be done quickly. Therefore, I seek a quick way to automatically set the weights. Fortunately, there are already two papers being written about this particular problem: Kendall et al. [2] and Chen et al. [1].

References

- [1] CHEN, Z., BADRINARAYANAN, V., LEE, C., AND RABINOVICH, A. Gradnorm: Gradient normalization for adaptive loss balancing in deep multitask networks. *CoRR abs/1711.02257* (2017).
- [2] KENDALL, A., GAL, Y., AND CIPOLLA, R. Multi-task learning using uncertainty to weigh losses for scene geometry and semantics. *CoRR abs/1705.07115* (2017).