REPORT
06.07.2020 - 12.07.2020

Summary

Since the code structure of Shift-GCN [1] is very similar with 2S-AGCN [2] which has been added "bone weights" feature. Both of them process "joint" and "bone" separately and ensemble the two information together.
Unfortunately, both of them give no good performance for Calo's data: both of them fluctuate about 32% accuracy after 50 epochs, and it not seems that it can be improved after some more epochs. Compared them two, there is no evident improvement for Calo's data.

The Semantics-Guided [3] model can reach about 90.01% accuracy with learnable parameters for Calo's data after 100 epochs with 663963 learnable parameters.
Since Semantics-Guided [3] performs well for Calo's data, using it as base code model, extracted core component of "Shift" feature of Shift-GCN [1] and integrated it with Semantics-Guided [3] with 175312 learnable parameters, the accuracy reaches about 85.47%.

The integrated model compared with Semantics-Guided [3] model: it cannot surpass in term of accuracy, but it runs much faster than that.
The integrated model compared with Shift-GCN [1]: it runs much more faster and gets better accuracy.

References

[1] K. Cheng, Y. Zhang, X. He, W. Chen, J. Cheng, and H. Lu, "Skeleton-based action recognition with shift graph convolutional network," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2020)*, June 2020.

[2] L. Shi, Y. Zhang, J. Cheng, and H. Lu, "Two-stream adaptive graph convolutional networks for skeleton-based action recognition," in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2019)*, pp. 12026–12035, June 2019.

[3] P. Zhang, C. Lan, W. Zeng, J. Xing, J. Xue, and N. Zheng, "Semantics-guided neural networks for efficient skeleton-based human action recognition," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2020)*, June 2020.