

ImageNet

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1 What are the references about?

The references in this document are all papers that introduce methods for supervised continual learning methods that perform well on ImageNet.

- [2]: Inspired by hippocampus replays hidden activations to the network to prevent catastrophic forgetting.
- [4]: Builds on iCaRL [5] but improves on regularization using: cosine normalization, a “less-forget” constraint and by encouraging inter-class separation.
- [1]: Uses a buffer and distillation loss to gradually learn new classes.
- [7]: Uses distillation loss that makes use of unlabeled auxillary data.
- [3]: Combines streaming linear discriminant analysis (SLDA) with deep learning to tackle catastrophic forgetting.
- [6]: Propose that the last fully connected layer of the network has strong bias towards new classes and that bias can be corrected by a linear model. Use this in conjunction with a distillation loss and a replay buffer.

2 References

References

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- [2] Tyler L Hayes, Kushal Kafle, Robik Shrestha, Manoj Acharya, and Christopher Kanan. Remind your neural network to prevent catastrophic forgetting. In *European Conference on Computer Vision*, pages 466–483. Springer, 2020.

- [3] Tyler L Hayes and Christopher Kanan. Lifelong machine learning with deep streaming linear discriminant analysis. In *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition workshops*, pages 220–221, 2020.
- [4] Saihui Hou, Xinyu Pan, Chen Change Loy, Zilei Wang, and Dahua Lin. Learning a unified classifier incrementally via rebalancing. In *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition*, pages 831–839, 2019.
- [5] Sylvestre-Alvise Rebuffi, Alexander Kolesnikov, Georg Sperl, and Christoph H Lampert. icarl: Incremental classifier and representation learning. In *Proceedings of the IEEE conference on Computer Vision and Pattern Recognition*, pages 2001–2010, 2017.
- [6] Yue Wu, Yinpeng Chen, Lijuan Wang, Yuancheng Ye, Zicheng Liu, Yandong Guo, and Yun Fu. Large scale incremental learning. In *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition*, pages 374–382, 2019.
- [7] Junting Zhang, Jie Zhang, Shalini Ghosh, Dawei Li, Serafettin Tasci, Larry Heck, Heming Zhang, and C-C Jay Kuo. Class-incremental learning via deep model consolidation. In *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision*, pages 1131–1140, 2020.