MetaLearning

by Henry Bourne

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1 What are the references about?

These references are all about papers on meta learning. First we will list some papers that look at meta learning and contrastive learning:

- [3]: Show that meta-learning and contrastive learning can be set up in ways where tehy are equivelant or very similar to each other.
- [2]: Uses meta-learning to learn augmentation generator for contrastive learning.

Now we will look at some papers that look at meta learning and continual learning:

- [5]: Uses meta-learning to control update step to prevent CF.
- [1]: Uses meta-learning to learn per-parameter learning rates to prevent CF.
- [4]: Similarly to [1] uses meta-learning to learn per-parameter learning rates to prevent CF, put promotes sparse gradients while doing so.

2 References

References

[1] Gunshi Gupta, Karmesh Yadav, and Liam Paull. Look-ahead meta learning for continual learning. *Advances in Neural Information Processing Systems*, 33:11588–11598, 2020.

[2] Jiangmeng Li, Wenwen Qiang, Changwen Zheng, Bing Su, and Hui Xiong. Metaug: Contrastive learning via meta feature augmentation. In *International Conference on Machine Learning*, pages 12964–12978. PMLR, 2022.

[3] Renkun Ni, Manli Shu, Hossein Souri, Micah Goldblum, and Tom Goldstein. The close relationship between contrastive learning and meta-learning. In *International Conference on Learning Representations*, 2021.

[4] Johannes Von Oswald, Dominic Zhao, Seijin Kobayashi, Simon Schug, Massimo Caccia, Nicolas Zucchet, and João Sacramento. Learning where to learn: Gradient sparsity in meta and continual learning. *Advances in Neural Information Processing Systems*, 34:5250–5263, 2021.

[5] Risto Vuorio, Dong-Yeon Cho, Daejoong Kim, and Jiwon Kim. Meta continual learning. *arXiv preprint arXiv:1806.06928*, 2018.