

Contrastive Learning

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1 What are the references about?

These references are all to do with contrastive learning, except for contrastive learning in SSL you can find papers on that in the ContinualLearning directory.

- [3]: Introduces the InfoNCE loss.
- [1]: SimCLR paper.
- [5]: Talks about role of negative sampling in contrastive learning and how to find good negatives.
- [4]: Talks about the role of temperature in contrastive learning and introduces the Uniformity-Tolerance tradeoff.
- [2]: States generalized form of InfoNCE loss, talks about learning from images with multiple objects and about competing features.

2 References

References

- [1] Ting Chen, Simon Kornblith, Mohammad Norouzi, and Geoffrey Hinton. A simple framework for contrastive learning of visual representations. In *International conference on machine learning*, pages 1597–1607. PMLR, 2020.
- [2] Ting Chen, Calvin Luo, and Lala Li. Intriguing properties of contrastive losses. *Advances in Neural Information Processing Systems*, 34:11834–11845, 2021.
- [3] Aaron van den Oord, Yazhe Li, and Oriol Vinyals. Representation learning with contrastive predictive coding. *arXiv preprint arXiv:1807.03748*, 2018.
- [4] Feng Wang and Huaping Liu. Understanding the behaviour of contrastive loss. In *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition*, pages 2495–2504, 2021.

- [5] Lanling Xu, Jianxun Lian, Wayne Xin Zhao, Ming Gong, Linjun Shou, Daxin Jiang, Xing Xie, and Ji-Rong Wen. Negative sampling for contrastive representation learning: A review. *arXiv preprint arXiv:2206.00212*, 2022.