References

- [1] Jean-Baptiste Alayrac, Jeff Donahue, Pauline Luc, Antoine Miech, Iain Barr, Yana Hasson, Karel Lenc, Arthur Mensch, Katie Millican, Malcolm Reynolds, et al. Flamingo: a Visual Language Model for Few-shot Learning. *arXiv* preprint arXiv:2204.14198, 2022.
- [2] Jean-Baptiste Alayrac, Adria Recasens, Rosalia Schneider, Relja Arandjelović, Jason Ramapuram, Jeffrey De Fauw, Lucas Smaira, Sander Dieleman, and Andrew Zisserman. Self-supervised multimodal versatile networks. *Advances in Neural Information Processing Systems*, 33:25–37, 2020.
- [3] Alexey Dosovitskiy, Lucas Beyer, Alexander Kolesnikov, Dirk Weissenborn, Xiaohua Zhai, Thomas Unterthiner, Mostafa Dehghani, Matthias Minderer, Georg Heigold, Sylvain Gelly, et al. An Image is Worth 16x16 Words: Transformers for Image Recognition at Scale. *arXiv preprint arXiv:2010.11929*, 2020.
- [4] Melvyn A Goodale. Visuomotor control: Where does vision end and action begin? *Current Biology*, 8(14):R489–R491, 1998.
- [5] Agrim Gupta, Stephen Tian, Yunzhi Zhang, Jiajun Wu, Roberto Martín-Martín, and Li Fei-Fei. Maskvit: Masked visual pre-training for video prediction. *arXiv preprint arXiv:2206.11894*, 2022.
- [6] Kaiming He, Xinlei Chen, Saining Xie, Yanghao Li, Piotr Dollár, and Ross Girshick. Masked autoencoders are scalable vision learners. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, pages 16000–16009, 2022.
- [7] Olivier J Hénaff, Skanda Koppula, Jean-Baptiste Alayrac, Aaron Van den Oord, Oriol Vinyals, and João Carreira. Efficient Visual Pretraining with Contrastive Detection. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pages 10086–10096, 2021.
- [8] Olivier J Hénaff, Skanda Koppula, Evan Shelhamer, Daniel Zoran, Andrew Jaegle, Andrew Zisserman, João Carreira, and Relja Arandjelović. Object Discovery and Representation Networks. *arXiv* preprint arXiv:2203.08777, 2022.
- [9] Shawn Hershey, Sourish Chaudhuri, Daniel PW Ellis, Jort F Gemmeke, Aren Jansen, R Channing Moore, Manoj Plakal, Devin Platt, Rif A Saurous, Bryan Seybold, et al. Cnn architectures for large-scale audio classification. In *2017 ieee international conference on acoustics, speech and signal processing (icassp)*, pages 131–135. IEEE, 2017.
- [10] Jordan Hoffmann, Sebastian Borgeaud, Arthur Mensch, Elena Buchatskaya, Trevor Cai, Eliza Rutherford, Diego de Las Casas, Lisa Anne Hendricks, Johannes Welbl, Aidan Clark, et al. Training compute-optimal large language models. *arXiv preprint arXiv:2203.15556*, 2022.
- [11] Edward Johns. Back to reality for imitation learning. In *Conference on Robot Learning*, pages 1764–1768. PMLR, 2022.
- [12] Skanda Koppula, Yazhe Li, Evan Shelhamer, Andrew Jaegle, Nikhil Parthasarathy, Relja Arandjelovic, João Carreira, and Olivier Hénaff. Where should i spend my flops? efficiency evaluations of visual pre-training methods. *arXiv preprint arXiv:2209.15589*, 2022.
- [13] Josh Merel, Arun Ahuja, Vu Pham, Saran Tunyasuvunakool, Siqi Liu, Dhruva Tirumala, Nicolas Heess, and Greg Wayne. Hierarchical visuomotor control of humanoids. *arXiv preprint arXiv:1811.09656*, 2018.

- [14] Antoine Miech, Jean-Baptiste Alayrac, Lucas Smaira, Ivan Laptev, Josef Sivic, and Andrew Zisserman. End-to-end learning of visual representations from uncurated instructional videos. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, pages 9879–9889, 2020.
- [15] Antoine Miech, Dimitri Zhukov, Jean-Baptiste Alayrac, Makarand Tapaswi, Ivan Laptev, and Josef Sivic. Howto100m: Learning a text-video embedding by watching hundred million narrated video clips. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pages 2630–2640, 2019.
- [16] Nikhil Parthasarathy, Ali Eslami, Joao Carreira, and Olivier Henaff. Strong video representations are competitive with image representations. *arXiv preprint arXiv:2206.04664*, 2022.
- [17] Alec Radford, Jong Wook Kim, Chris Hallacy, Aditya Ramesh, Gabriel Goh, Sandhini Agarwal, Girish Sastry, Amanda Askell, Pamela Mishkin, Jack Clark, et al. Learning Transferable Visual Models from Natural Language Supervision. In *International Conference on Machine Learning*, pages 8748–8763. PMLR, 2021.
- [18] Ilija Radosavovic, Tete Xiao, Stephen James, Pieter Abbeel, Jitendra Malik, and Trevor Darrell. Real world robot learning with masked visual pre-training. In *6th Annual Conference on Robot Learning*, 2022.
- [19] Adria Recasens, Pauline Luc, Jean-Baptiste Alayrac, Luyu Wang, Florian Strub, Corentin Tallec, Mateusz Malinowski, Viorica Pătrăucean, Florent Altché, Michal Valko, et al. Broaden your views for self-supervised video learning. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pages 1255–1265, 2021.
- [20] Scott Reed, Konrad Zolna, Emilio Parisotto, Sergio Gomez Colmenarejo, Alexander Novikov, Gabriel Barth-Maron, Mai Gimenez, Yury Sulsky, Jackie Kay, Jost Tobias Springenberg, et al. A generalist agent. *arXiv preprint arXiv:2205.06175*, 2022.
- [21] Tal Ridnik, Emanuel Ben-Baruch, Asaf Noy, and Lihi Zelnik-Manor. Imagenet-21K Pretraining for the Masses. *arXiv preprint arXiv:2104.10972*, 2021.
- [22] Mohit Sharma, Claudio Fantacci, Yuxiang Wang, Skanda Koppula, Jon Scholz, and Yusuf Aytar. Lossless adaptation of pretrained vision models for robotic manipulation. *arXiv preprint* arXiv:2209.15589, 2022.
- [23] Chen Sun, Abhinav Shrivastava, Saurabh Singh, and Abhinav Gupta. Revisiting unreasonable effectiveness of data in deep learning era. In *Proceedings of the IEEE International Conference on Computer Vision*, pages 843–852, 2017.
- [24] Zachary Teed and Jia Deng. Deepv2d: Video to depth with differentiable structure from motion. *arXiv preprint arXiv:1812.04605*, 2018.
- [25] Yonglong Tian, Olivier J Henaff, and Aäron van den Oord. Divide and contrast: Self-supervised learning from uncurated data. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pages 10063–10074, 2021.
- [26] Zhan Tong, Yibing Song, Jue Wang, and Limin Wang. Videomae: Masked autoencoders are data-efficient learners for self-supervised video pre-training. *arXiv* preprint arXiv:2203.12602, 2022.

- [27] Mel Vecerik, Jean-Baptiste Regli, Oleg Sushkov, David Barker, Rugile Pevceviciute, Thomas Rothörl, Christopher Schuster, Raia Hadsell, Lourdes Agapito, and Jonathan Scholz. S3k: Self-supervised semantic keypoints for robotic manipulation via multi-view consistency. *arXiv preprint arXiv:2009.14711*, 2020.
- [28] Markus Wulfmeier, Arunkumar Byravan, Tim Hertweck, Irina Higgins, Ankush Gupta, Tejas Kulkarni, Malcolm Reynolds, Denis Teplyashin, Roland Hafner, Thomas Lampe, et al. Representation matters: improving perception and exploration for robotics. In *2021 IEEE International Conference on Robotics and Automation (ICRA)*, pages 6512–6519. IEEE, 2021.
- [29] Sen Yang, Zhibin Quan, Mu Nie, and Wankou Yang. Transpose: Keypoint localization via transformer. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pages 11802–11812, 2021.
- [30] Wei Yin, Jianming Zhang, Oliver Wang, Simon Niklaus, Simon Chen, Yifan Liu, and Chunhua Shen. Towards accurate reconstruction of 3d scene shape from a single monocular image. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2022.
- [31] Lu Yuan, Dongdong Chen, Yi-Ling Chen, Noel Codella, Xiyang Dai, Jianfeng Gao, Houdong Hu, Xuedong Huang, Boxin Li, Chunyuan Li, et al. Florence: A new foundation model for computer vision. *arXiv preprint arXiv:2111.11432*, 2021.