ings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), June 2016. 3, 6

[24] Geoffrey Hinton, Oriol Vinyals, and Jeffrey Dean. Distilling the knowledge in a neural network. In *NIPS Deep Learning and Representation Learning Workshop*, 2015. 2

[25] Chaoqing Huang, Jinkun Cao, Fei Ye, Maosen Li, Ya Zhang, and Cewu Lu. Inverse-transform autoencoder for anomaly detection. *CoRR*, abs/1911.10676, 2019. 2, 4

[26] Yibin Huang, C. Qiu, and K. Yuan. Surface defect saliency of magnetic tile. *The Visual Computer*, 36:85–96, 2018. 2, 5, 8

[27] Jeff Johnson, Matthijs Douze, and Hervé Jégou. Billion-scale similarity search with gpus. *IEEE Transactions on Big Data*, pages 1–1, 2019. 6, 1

[28] Andrei Kapishnikov, Tolga Bolukbasi, Fernanda Viegas, and Michael Terry. Xrai: Better attributions through regions. In *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, October 2019. 2

[29] Ki Hyun Kim, Sangwoo Shim, Yongsub Lim, Jongseob Jeon, Jeongwoo Choi, Byungchan Kim, and Andre S. Yoon. Rapp: Novelty detection with reconstruction along projection pathway. In *International Conference on Learning Representations*, 2020. 2

[30] Durk P Kingma and Prafulla Dhariwal. Glow: Generative flow with invertible 1x1 convolutions. In S. Bengio, H. Wallach, H. Larochelle, K. Grauman, N. Cesa-Bianchi, and R. Garnett, editors, *Advances in Neural Information Processing Systems*, volume 31. Curran Associates, Inc., 2018. 2

[31] Wenqian Liu, Runze Li, Meng Zheng, Srikrishna Karanam, Ziyan Wu, Bir Bhanu, Richard J. Radke, and Octavia Camps. Towards visually explaining variational autoencoders. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2020. 4

[32] W. Liu, D. Lian W. Luo, and S. Gao. Future frame prediction for anomaly detection – a new baseline. In *2018 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018. 5, 8

[33] Prasanta Chandra Mahalanobis. On the generalized distance in statistics. *Proceedings of the National Institute of Sciences (Calcutta)*, 2:49–55, 1936. 2

[34] Ben Mussay, Margarita Osadchy, Vladimir Braverman, Samson Zhou, and Dan Feldman. Data-independent neural pruning via coresets. In *International Conference on Learning Representations*, 2020. 2

[35] Tiago S. Nazaré, Rodrigo Fernandes de Mello, and Moacir A. Ponti. Are pre-trained cnns good feature extractors for anomaly detection in surveillance videos? *CoRR*, abs/1811.08495, 2018. 8

[36] Duc Tam Nguyen, Zhongyu Lou, Michael Klar, and Thomas Brox. Anomaly detection with multiple-hypotheses predictions. In Kamalika Chaudhuri and Ruslan Salakhutdinov, editors, *Proceedings of the 36th International Conference on Machine Learning*, volume 97 of *Proceedings of Machine Learning Research*, pages 4800–4809. PMLR, 09–15 Jun 2019. 1

[37] Adam Paszke, Sam Gross, Francisco Massa, Adam Lerer, James Bradbury, Gregory Chanan, Trevor Killeen, Zeming Lin, Natalia Gimelshein, Luca Antiga, Alban Desmaison, Andreas Köpf, Edward Yang, Zach DeVito, Martin Raison, Alykhan Tejani, Sasank Chilamkurthy, Benoit Steiner, Lu Fang, Junjie Bai, and Soumith Chintala. Pytorch: An imperative style, high-performance deep learning library, 2019. 1

[38] Pramuditha Perera, Ramesh Nallapati, and Bing Xiang. Ocgan: One-class novelty detection using gans with constrained latent representations. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2019. 2

[39] Stanislav Pidhorskyi, Ranya Almohsen, Donald A. Adjeroh, and Gianfranco Doretto. Generative probabilistic novelty detection with adversarial autoencoders. In *Proceedings of the 32nd International Conference on Neural Information Processing Systems*, NIPS'18, page 6823–6834, Red Hook, NY, USA, 2018. Curran Associates Inc. 1, 2

[40] Oliver Rippel, Patrick Mertens, and Dorit Merhof. Modeling the distribution of normal data in pre-trained deep features for anomaly detection. In *2020 25th International Conference on Pattern Recognition (ICPR)*, pages 6726–6733, 2021. 2, 6, 4

[41] Karsten Roth, Timo Milbich, Samarth Sinha, Prateek Gupta, Bjorn Ommer, and Joseph Paul Cohen. Revisiting training strategies and generalization performance in deep metric learning. In Hal Daumé III and Aarti Singh, editors, *Proceedings of the 37th International Conference on Machine Learning*, volume 119 of *Proceedings of Machine Learning Research*, pages 8242–8252. PMLR, 13–18 Jul 2020. 3

[42] Marco Rudolph, Bastian Wandt, and Bodo Rosenhahn. Same same but differnet: Semi-supervised defect detection with normalizing flows. In *Winter Conference on Applications of Computer Vision (WACV)*, Jan. 2021. 1, 2, 5, 6, 8, 4

[43] Mohammad Sabokrou, Mohammad Khalooei, Mahmood Fathy, and Ehsan Adeli. Adversarially learned one-class classifier for novelty detection. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2018. 1, 2

[44] Mayu Sakurada and Takehisa Yairi. Anomaly detection using autoencoders with nonlinear dimensionality reduction. In *Proceedings of the MLSDA 2014 2nd Workshop on Machine Learning for Sensory Data Analysis*, MLSDA'14, page 4–11, New York, NY, USA, 2014. Association for Computing Machinery. 1, 2

[45] Mohammadreza Salehi, Niousha Sadjadi, Soroosh Baselizadeh, Mohammad Hossein Rohban, and Hamid R. Rabiee. Multiresolution knowledge distillation for anomaly detection, 2020. 2

[46] Bernhard Schölkopf, Robert C. Williamson, Alex J. Smola, John Shawe-Taylor, and John C. Platt. Support vector method for novelty detection. In *Advances in Neural Information Processing Systems 12*, pages 582–588, Cambridge, MA, USA, June 2000. Max-Planck-Gesellschaft, MIT Press. 2

[47] R. R. Selvaraju, M. Cogswell, A. Das, R. Vedantam, D. Parikh, and D. Batra. Grad-cam: Visual explanations from deep networks via gradient-based localization. In *2017 IEEE*