

REFERENCES

- Abu, M., Amir, A., Lean, Y.H., Zahri, N.A.H., Azemi, S.A., 2021. The Performance Analysis of Transfer Learning for Steel Defect Detection by Using Deep Learning. *Journal of Physics: Conference Series* 1755. <https://doi.org/10.1088/1742-6596/1755/1/012041>
- Alom, Md.Z., Taha, T., Yakopcic, C., Westberg, S., Sidike, P., Nasrin, M., Hasan, M., Essen, B., Awwal, A., Asari, V., 2019. A State-of-the-Art Survey on Deep Learning Theory and Architectures. *Electronics (Basel)* 8, 292. <https://doi.org/10.3390/electronics8030292>
- Alzubaidi, L., Zhang, J., Humaidi, A.J., Al-Dujaili, A., Duan, Y., Al-Shamma, O., Santamaría, J., Fadhel, M.A., Al-Amidie, M., Farhan, L., 2021. Review of deep learning: concepts, CNN architectures, challenges, applications, future directions. *Journal of Big Data* 8, 53. <https://doi.org/10.1186/s40537-021-00444-8>
- Amin, D., Akhter, S., 2020. Deep Learning-Based Defect Detection System in Steel Sheet Surfaces. *2020 IEEE Region 10 Symposium, TENSYP 2020* 444–448. <https://doi.org/10.1109/TENSYP50017.2020.9230863>
- Aslanzadeh, R., Qazanfari, K., Rahmati, M., 2017. An Efficient Evolutionary Based Method For Image Segmentation. *CoRR* abs/1709.0, 1–17. <https://doi.org/10.48550/ARXIV.1709.04393>
- Boikov, A., Payor, V., Savelev, R., Kolesnikov, A., 2021. Synthetic data generation for steel defect detection and classification using deep learning. *Symmetry (Basel)* 13, 1–10. <https://doi.org/10.3390/sym13071176>
- Božič, J., Tabernik, D., Skočaj, D., 2020. End-to-end training of a two-stage neural network for defect detection. *Proceedings - International Conference on Pattern Recognition* 5619–5626. <https://doi.org/10.1109/ICPR48806.2021.9412092>

- Damacharla, P., Achuth Rao, M. v., Ringenberg, J., Javaid, A.Y., 2021. TLU-Net: A Deep Learning Approach for Automatic Steel Surface Defect Detection. *2021 International Conference on Applied Artificial Intelligence, ICAPAI 2021*. <https://doi.org/10.1109/ICAPAI49758.2021.9462060>
- Fadli, V.F., Herlistiono, I.O., 2020. Steel Surface Defect Detection using Deep Learning. *International Journal of Innovative Science and Research Technology* 5, 244–250. <https://doi.org/10.38124/ijisrt20jul240>
- Feng, X., Gao, X., Luo, L., 2021. A Method for Surface Detect Classification of Hot Rolled Strip Steel based on Xception. *Proceedings of the 33rd Chinese Control and Decision Conference, CCDC 2021* 1485–1489. <https://doi.org/10.1109/CCDC52312.2021.9601541>
- Gupta, C., Chauhan, G., Aiyar, H.D.S., 2022. Detection of Defective Steel Surface with Image Segmentation. *International Conference on Sustainable Computing and Data Communication Systems, ICSCDS 2022 - Proceedings* 1578–1582. <https://doi.org/10.1109/ICSCDS53736.2022.9760806>
- Jing, J., Wang, Z., Rätsch, M., Zhang, H., 2022. Mobile-Unet: An efficient convolutional neural network for fabric defect detection. *Textile Research Journal* 92, 30–42. <https://doi.org/10.1177/0040517520928604>
- Karagoz, G.N., Yazici, A., Dokeroglu, T., Cosar, A., 2021. A new framework of multi-objective evolutionary algorithms for feature selection and multi-label classification of video data. *International Journal of Machine Learning and Cybernetics* 12, 53–71. <https://doi.org/10.1007/s13042-020-01156-w>
- Kim, H., 2020. Use Cases for Contractors. *Infrastructure Computer Vision* 267–313. <https://doi.org/10.1016/B978-0-12-815503-5.00006-1>
- Konovalenko, I., Maruschak, P., Brezinová, J., Prentkovskis, O., Brezina, J., 2022. Research of U-Net-Based CNN Architectures for Metal Surface Defect Detection. *Machines* 10. <https://doi.org/10.3390/machines10050327>

- Li, F.-F., Johnson, J., Yeung, S., 2017. Detection and Segmentation [WWW Document]. URL http://cs231n.stanford.edu/slides/2017/cs231n_2017_lecture11.pdf (accessed 6.20.22).
- Mostapha, M., 2014. A Novel Diffusion Tensor Imaging-Based Computer-Aided Diagnostic System For Early Diagnosis Of Autism. *University of Louisville*. <https://doi.org/10.13140/2.1.2236.1283>
- Nie, Z., Xu, J., Zhang, S., 2020. Analysis on DeepLabV3+ Performance for Automatic Steel Defects Detection. *CoRR*.
- Papaefthymiou, S., Tzevelekou, T., Antonopoulos, A., Gypakis, A., 2016. Typical defects in plate and long steel products. *International Journal of Structural Integrity* 7, 645–655. <https://doi.org/10.1108/IJSI-09-2015-0039>
- Prihatno, A.T., Utama, I.B.K.Y., Kim, J.Y., Jang, Y.M., 2021. Metal Defect Classification Using Deep Learning. *International Conference on Ubiquitous and Future Networks, ICUFN 2021-Augus*, 389–393. <https://doi.org/10.1109/ICUFN49451.2021.9528702>
- Robotyshyn, M., Sharkadi, M., Malyar, M., 2021. Surface Defect Detection Based on Deep Learning Approach. *CEUR Workshop Proceedings 3106*, 32–44.
- Ronneberger, O., Fischer, P., Brox, T., 2015. U-Net: Convolutional Networks for Biomedical Image Segmentation, in: Navab, N., Hornegger, J., Wells, W.M., Frangi, A.F. (Eds.), *Medical Image Computing and Computer-Assisted Intervention -- MICCAI 2015*. Springer International Publishing, Cham, pp. 234–241. https://doi.org/10.1007/978-3-319-24574-4_28
- Sandler, M., Howard A.G., Zhu, M., Zhmoginov, A., Chen, L.-C., 2018. MobileNetV2: Inverted Residuals and Linear Bottlenecks. *IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 4510–4520. <https://doi.org/10.1109/CVPR.2018.00474>

- Shinozuka, M., Mansouri, B., 2009. Synthetic aperture radar and remote sensing technologies for structural health monitoring of civil infrastructure systems. *Structural Health Monitoring of Civil Infrastructure Systems* 113–151. <https://doi.org/10.1533/9781845696825.1.114>
- Shorten, C., Khoshgoftaar, T.M., 2019. A survey on Image Data Augmentation for Deep Learning. *Journal of Big Data* 6. <https://doi.org/10.1186/s40537-019-0197-0>
- Song, K., Yan, Y., 2013. A noise robust method based on completed local binary patterns for hot-rolled steel strip surface defects. *Applied Surface Science* 285, 858–864. <https://doi.org/10.1016/j.apsusc.2013.09.002>
- Tabernik, D., Šela, S., Skvarč, J., Skočaj, D., 2020. Segmentation-based deep-learning approach for surface-defect detection. *Journal of Intelligent Manufacturing* 31, 759–776. <https://doi.org/10.1007/s10845-019-01476-x>
- Tian, S., Li, W., Li, S., Tian, G., Sun, L., Ning, X., 2021. Image Defect Detection and Segmentation Algorithm of Solar Cell Based on Convolutional Neural Network. *2021 IEEE 6th International Conference on Intelligent Computing and Signal Processing, ICSP 2021* 154–157. <https://doi.org/10.1109/ICSP51882.2021.9408827>
- Vakili, M., Ghamsari, M., Rezaei, M., 2020. Performance Analysis and Comparison of Machine and Deep Learning Algorithms for IoT Data Classification.
- Wang, S., Xia, X., Ye, L., Yang, B., 2020. Steel Surface Defect Detection Using Transfer Learning and Image Segmentation, in: *2020 IEEE 6th International Conference on Computer and Communications, ICC 2020*. Institute of Electrical and Electronics Engineers Inc., pp. 420–425. <https://doi.org/10.1109/ICCC51575.2020.9345151>
- Xia, X., Wang, S., Liu, S., Ye, L., Yang, B., 2020. Surface Defect Detection Using U-net and transfer learning, in: *Proceedings - 2020 13th International*

Conference on Intelligent Computation Technology and Automation, ICICTA 2020. Institute of Electrical and Electronics Engineers Inc., pp. 249–253.
<https://doi.org/10.1109/ICICTA51737.2020.00059>

Yamashita, R., Nishio, M., Do, R.K.G., Togashi, K., 2018. Convolutional neural networks: an overview and application in radiology. *Insights into Imaging* 9, 611–629. <https://doi.org/10.1007/s13244-018-0639-9>

Zhao, W., Chen, F., Huang, H., Li, D., Cheng, W., 2021. A new steel defect detection algorithm based on deep learning. *Computational Intelligence and Neuroscience 2021*. <https://doi.org/10.1155/2021/5592878>

Zhou, S., Chen, Y., Zhang, D., Xie, J., Zhou, Y., 2017. Learning a class-specific and shared dictionary for classifying surface defects of steel sheet. *ISIJ International* 57, 123–130. <https://doi.org/10.2355/isijinternational.ISIJINT-2016-478>