

images on learning content can be processed with the CNN model, it turns out that this can be done with the foundation is the experiment that we are working on and supported by previous research theories.

IV. CONCLUSION

Learning content is something important in supporting the learning process. Learning content can be integrated across many digital platforms, such as YouTube. Searching for learning materials using keywords such as learning mathematics on YouTube is still done by typing these keywords in the search menu. The CNN model used in the dataset training process tested the image with multiple optimizers and obtained high accuracy results on RMSprop, Adam, and Adamax. The CNN Prediction Model with Deep Learning in the future is expected to be able to directly predict learning content contained in digital platforms so that without typing in the search menu related to the material they want to learn, users can already be given display notifications on these contents related to the field of learning content in the exact sciences and social sciences. The experiments we worked on in this study showed that the CNN model could predict images of learning content contained on YouTube. Artificial Intelligence will certainly have an even greater positive impact on the lives of mankind.

ACKNOWLEDGMENT

The Information Technology Department of Sari Mulia University and the Informatics Department of the Muhammadiyah University of Banjarmasin support this research.

REFERENCES

- [1] P. D. Rebeca, A. Fern, and M. C. Rodr, "Integrating micro-learning content in traditional e-learning platforms," *Multimed. Tools Appl.*, vol. 80, pp. 3121–3151, 2020.
- [2] B. McCartney, B. Devereux, and J. Martinez-del-rincon, "A zero-shot deep metric learning approach to Brain – Computer Interfaces for image retrieval," *Knowledge-Based Syst.*, vol. 246, 2022.
- [3] Y. Matsuo, Y. Lecun, M. Sahani, D. Precup, and D. Silver, "Deep learning , reinforcement learning , and world models," *Neural Networks*, vol. 152, pp. 267–275, 2022.
- [4] A. Eko, M. Hazmi, C. Mandiri, Y. Azhar, and F. Bimantoro, "Classification of Diabetic Retinopathy Disease Using Convolutional Neural Network," *Int. J. INFORMATICS Vis.*, vol. 6, no. March, pp. 12–18, 2022.
- [5] R. Bina *et al.*, "Cataract Classification Based on Fundus Images Using Convolutional Neural Network," *Int. J. INFORMATICS Vis.*, vol. 6, no. March, pp. 33–38, 2022.
- [6] S. Aulia and D. Rahmat, "Brain Tumor Identification Based on VGG-16 Architecture and CLAHE Method," *Int. J. INFORMATICS Vis.*, vol. 6, no. March, pp. 96–102, 2022.
- [7] X. Xia and W. Qi, "Artificial Intelligence Temporal tracking and early warning of multi semantic features of learning behavior," *Comput. Educ. Artif. Intell.*, vol. 3, no. August 2021, p. 100045, 2022.
- [8] S. Minn, "AI-assisted knowledge assessment techniques for adaptive learning environments," *Comput. Educ. Artif. Intell.*, vol. 3, no. July 2021, p. 100050, 2022.
- [9] S. Liu *et al.*, "Tool path planning of consecutive free-form sheet metal stamping with deep learning," *J. Mater. Process. Tech.*, vol. 303, no. February, p. 117530, 2022.
- [10] P. M. Blok, G. Kootstra, H. Elchaoui, B. Diallo, F. K. Van Evert, and E. J. Van Henten, "Active learning with MaskAL reduces annotation effort for training Mask R-CNN on a broccoli dataset with visually similar classes," *Comput. Electron. Agric.*, vol. 197, no. December 2021, p. 106917, 2022.
- [11] M. P. Islam, K. Hatou, T. Aihara, S. Seno, S. Kirino, and S. Okamoto, "Performance prediction of tomato leaf disease by a series of parallel convolutional neural networks," *Smart Agric. Technol.*, vol. 2, no. March, p. 100054, 2022.
- [12] W. Huang, M. Svanborg, M. Juul, and M. Toudal, "The application of convolutional neural networks for tomographic reconstruction of hyperspectral images," *Displays*, vol. 74, no. January, p. 102218, 2022.
- [13] S. Zamboni, Z. Tilahun, S. Girdzijauskas, C. Norén, and L. Dal, "Pedestrian trajectory prediction with convolutional neural networks," *Pattern Recognit.*, vol. 121, p. 108252, 2022.
- [14] A. La *et al.*, "A 2 . 5D convolutional neural network for HPV prediction in advanced oropharyngeal cancer," *Comput. Biol. Med.*, vol. 142, p. 105215, 2022.
- [15] N. Singh, V. K. Tewari, P. K. Biswas, L. K. Dhruw, C. M. Pareek, and H. D. Singh, "Semantic segmentation of in-field cotton bolls from the sky using deep convolutional neural networks," *Smart Agric. Technol.*, vol. 2, no. March, p. 100045, 2022.
- [16] M. Yang *et al.*, "Detecting and mapping tree crowns based on convolutional neural network and Google Earth images," *Int. J. Appl. Earth Obs. Geoinf.*, vol. 108, no. March, p. 102764, 2022.
- [17] A. S. Paymode and V. B. Malode, "Transfer Learning for Multi-Crop Leaf Disease Image Classification using Convolutional Neural Network VGG," *Artif. Intell. Agric.*, vol. 6, pp. 1–11, 2022.
- [18] H. Trang, N. Thanh, and D. Hwang, "Convolutional attention neural network over graph structures for improving the performance of aspect-level sentiment analysis," *Inf. Sci. (Ny)*, vol. 589, pp. 416–439, 2022.
- [19] I. Rodriguez-martinez, J. Lafuente, and R. H. N. Santiago, "Replacing pooling functions in Convolutional Neural Networks by linear combinations of increasing functions," *Neural Networks*, vol. 152, pp. 380–393, 2022.
- [20] H. Min, T. Ko, I. Young, and J. Myong, "Asbestosis diagnosis algorithm combining the lung segmentation method and deep learning model in computed tomography image," *Int. J. Med. Inform.*, vol. 158, p. 104667, 2022.
- [21] F. Chen and J. Yeu, "Assessing the effects of convolutional neural network architectural factors on model performance for remote sensing image classification: An in-depth investigation," *Int. J. Appl. Earth Obs. Geoinf.*, vol. 112, p. 102865, 2022.
- [22] L. Ruo, H. Kamaludin, N. Zuraidin, M. Safar, N. Wahid, and N. Abdullah, "Intelligence Eye for Blinds and Visually Impaired by Using Region- Based Convolutional Neural Network (R-CNN)," *Int. J. INFORMATICS Vis.*, vol. 5, no. December, pp. 409–414, 2021.