2022 IEEE 8th International Conference on Computing, Engineering and Design, ICCED 2022 • 2022 • 8th IEEE International Conference on Computing, Engineering and Design, ICCED 2022 • Sukabumi • 28 July 2022through 29 July 2022 • Code 186027

Document type
Conference Paper

Source type
Conference Proceedings

ISBN
978-166545389-9

DOI
10.1109/ICCED56140.2022.10010544

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Cervical Cancer Identification using Deep Learning Approaches

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Abstract

The presence of cervical cancer is not apparent as its incubation period is long. A pap smear screening is the only diagnostic method; examining the pap smear slides uses a microscope. However, problems happen where humans make mistakes during the diagnostic process, causing inaccurate results and delaying the individual who needs to receive comprehensive treatments. With hopes to improve the

current situation, assisting cervical cancer diagnosis with artificial intelligence techniques is suggested. This paper will use ResNet101v2, an upgraded residual network from ResNet, to develop a cervical cancer detection model to predict the severity of cervical cells. The Herlev dataset distributed 70% into training and 30% into validation; remaining 98 unique images will be used during the testing stage. Transfer learning techniques were introduced to develop the model. Using the testing images, the model reached 71.4% accuracy contributing better accuracy compared to other research studies in predicting the cervical cells using 7 classification classes. The model shows potential for clinical cytotechnologists' during the pap smear diagnosis. © 2022 IEEE.

Author keywords

Artificial Intelligence; Cervical cancer; Deep Learning

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