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Smart Intelligent System for Cervix Cancer Image Classification Using Google Cloud Platform

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Abstract

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tools for disease diagnosis, health monitoring, information pooling of patient records, identifying medical patterns, clinical decision making, forecasting medical trends or complications, drug discovery, recommend medical practices, delivering rehabilitation therapy, personalized and patient centric medication. The evolution of digital technologies, intelligent systems and smart devices empowered healthcare supports sustainable smart city development. In this work, a smart intelligent system is proposed for the staging classification of cervical cancer images by applying Automated Machine Learning (AutoML) using Google Cloud Platform (GCP). The description of the proposed system pipeline is given as follows. (1) Real time cervical cancer images from EVA digital colposcopy are collected from Kaggle site. These raw datasets are utilized to construct the proposed system, (2) The different stages of cervical cancer images are prepared, labelled and then uploaded into GCP environment, (3) A smart intelligent system is constructed using AutoML framework to categorize the stages of cervical cancer, and (4) The developed

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involvement of taking biopsy and earlier detection of precancerous lesions.

Keywords

AutoML **Cervical cancer** **GCP**

Smart healthcare **Vertex AI**

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References

1. Gade, D. S., & Aithal, P. S. (2022). ICT and digital technology-based solutions for smart city challenges and opportunities. *International Journal of Applied Engineering and Management Letters*, 6(1), 1–21.
2. Smart City. In *TechTarget*.
<https://www.techtarget.com/iotagenda/definition/smart-city/>. Accessed on 27 Mar 2022.
3. AI-powered smart healthcare in smart cities. In *Research Topic*.
<https://www.frontiersin.org/research-topics/21020/ai-powered-smart-healthcare-in-smart-cities/>. Accessed on 27 Mar 2022.

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5. Tian, S., Yang, W., Le, G., Jehane, M., Wang, P., Huang, W., & Ye, Z. (2019). Smart healthcare: Making medical care more intelligent. *Global Health Journal*, 3(3), 62–65.

6. Smart healthcare market detailed analysis by product, region, and forecasts to 2022: Grand view research Inc. In *abnews wire*.
<https://www.abnewswire.com/pressreleases/smart-healthcare-market-detailed-analysis-by-product-region-and-forecasts-to-2022-grand-view-research-inc-422379.html/>. Accessed on 27 Mar 2022.

7. Companies in smart healthcare products market collaborate with health stakeholders to reduce burden of chronic diseases, global valuation to expand at 8.8% from 2019 to 2027: TMR. In *CISION PR Newswire*.<https://www.prnewswire.com/news-releases/companies-in-smart-healthcare-products-market-collaborate-with-health->

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smart environment for monitoring cancer patients therapy through OncoSmart. *Journal of Smart Environments and Green Computing*, 1(4), 189–201.

9. World Health Organization. (2022). Cervical cancer. In *WHO Newsroom*. <https://www.who.int/news-room/fact-sheets/detail/cervical-cancer/>. Accessed on 29 Mar 2022.
-

10. Cho, B. J., Kim, J. W., Park, J., Kwon, G. Y., Hong, M., Jang, S. H., Bang, H., Kim, G., & Park, S. T. (2022). Automated diagnosis of cervical intraepithelial neoplasia in histology images via deep learning. *Diagnostics*, 12(2), 1–15.
-

11. Ekaba, B. (2019). *Building machine learning and deep learning models on Google Cloud Platform a comprehensive guide for beginners*. Apress.

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