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Effective Face Mask Detection by Deep ConvNeuralNets Learning for Covid-19 Prevention

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Abstract: In Recent years, COVID-19 is the buzzword in our society, since it is too much dangerous, believed as it is originated from China from the place of Wuhan in December 2019. This Disease is spreading from humans to humans through droplets and airborne. A methodology has to be developed recognize whether the people are wearing mask or not. Therefore, this paper proposes a framework to recognize the mask. Based on the features proposes a machine learning basis system which recognizes the mask from the inputted image. Existing system Only detecting the person who is not using a mask apart from that system will not predict whether the used mask safe or not. A better deep learning framework which predicts the people with mask or not so it will be helping the society is discussed and apart from that this, it extends the mean of finding what type of mask they are wearing also predicts the efficiency of mask so user can protect themselves from the dreadful corona virus.

Keywords: Deep Learning, Covid-19, Machine Learning, Convolutional Neural networks

REFERENCES

- [1]. Mingjie Jiang, Xinqi Fan, Hong Yan, "RETINAFACEMASK: A FACE MASK DETECTOR", arXiv:2005.03950v2 [cs.CV] 8 Jun 2020.
- [2]. Toshan Meenpal, Ashutosh Balakrishnan, Amit Verma," Facial Mask Detection using Semantic Segmentation", 4th International Conference on Computing, Communications and Security (ICCCS),2019.
- [3]. Kaihan Lin, Huimin Zhao, Jujian Lv, Canyao Li, Xiaoyong Liu, Rongjun Chen, and Ruoyan Zhao, "Face Detection and Segmentation Based on Improved Mask R-CNN", Hindawi Discrete Dynamics in Nature and Society, Published 1 May 2020.
- [4]. Mohammad Marufur Rahman, Md. Motaleb Hossen Manik , Md. Milon Islam , Saifuddin Mahmud , Jong-Hoon Kim , "An Automated System to Limit COVID-19 Using Facial Mask Detection in Smart City Network ", Authorized licensed use limited to: Kent State University Libraries. Downloaded on October 10,2020.
- [5]. Borut Batagelj, Peter Peer, Vitomir Štruc and Simon Dobrišek, "How to Correctly Detect Face-Masks for COVID-19 from Visual Information?", MDPI, February 2021.
- [6]. Ms. R. Suganthalakshmi, A. Hafeeza, P. Abinaya, A.Ganga Devi, "Covid-19 Facemask Detection with Deep Learning and Computer Vision", International Journal of Engineering Research & Technology (IJERT), Volume 9, Issue 5, 2021
- [7]. L. Liu, W. Ouyang, X. Wang, P. Fieguth, J. Chen, X. Liu, and M. Pietikäinen, "Deep learning for generic object detection: A survey," International journal of computer vision, vol. 128, no. 2, pp. 261–318, 2020
- [8]. KaihanLin ,Huimin Zhao , JujianLv , Canyao Li, Xiaoyong Liu, Rongjun Chen, and Ruoyan Zhao," Face Detection and Segmentation Based on Improved Mask R-CNN," Hindawi Discrete Dynamics in Nature and Society, 2020.
- [9]. R. Jaiswal, A. Agarwal, and R. NEGI, "Smart Solution for Reducing the COVID-19 Risk using Smart City Technology," IET Smart Cities, vol.2, pp. 82–88, 2020.
- [10]. J. W. Sonn, M. Kang, and Y. Choi, "Smart city technologies for pandemic control without lockdown," Int. J. Urban Sci., vol. 24, no. 2, pp. 149–151, 2020.
- [11]. Jennifer L.W, Fink, RN, BSN, November 18,2020, 7 june 2021, < https://www.healthgrades.com/right-care/coronavirus/9-types-of-masks-and-how-effective-they-are>.

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- [12]. J. Won Sonn and J. K. Lee, "The smart city as time-space cartographer in COVID-19 control: the South Korean strategy and democratic control of surveillance technology," Eurasian Geogr. Econ., pp. 1–11, May. 2020.
- [13]. M. Gupta, M. Abdelsalam, and S. Mittal, "Enabling and Enforcing Social Distancing Measures using Smart City and ITS Infrastructures: A COVID-19 Use Case," 2020.
- [14]. Z. Allam and D. S. Jones, "On the Coronavirus (COVID-19) Outbreak and the Smart City Network: Universal Data Sharing Standards Coupled with Artificial Intelligence (AI) to Benefit Urban Health Monitoring and Management," Healthcare, vol. 8, no. 1, p. 46, 2020.
- [15]. X. Wang, X. Le, and Q. Lu, "Analysis of China's Smart City Upgrade and Smart Logistics Development under the COVID-19 Epidemic," J. Phys. Conf. Ser., vol. 1570, p. 012066, 2020.
- [16]. G. Halegoua, "Smart City Technologies," Smart Cities, 2020, doi: 10.7551/mitpress/11426.003.0005.
- [17]. L. P. Garcia, "Uso de máscara facial para limitar a transmissão da COVID-19," Epidemiol. e Serv. saude Rev. do Sist. Unico Saude do Bras., vol. 29, no. 2, p. e2020023, 2020.
- [18]. L. J. Muhammad, M. M. Islam, S. S. Usman, and S. I. Ayon, "Predictive Data Mining Models for Novel Coronavirus (COVID-19) Infected Patients' Recovery," SN Comput. Sci., vol. 1, no. 4, p. 206, Jun. 2020.
- [19]. M. Z. Islam, M. M. Islam, and A. Asraf, "A Combined Deep CNNLSTM Network for the Detection of Novel Coronavirus (COVID-19) Using X-ray Images," Informatics in Medicine Unlocked, vol. 20, pp. 100412, Aug. 2020.
- [20]. L. Li et al., "COVID-19 patients' clinical characteristics, discharge rate, and fatality rate of meta-analysis," J. Med. Virol., vol. 92, no. 6, pp. 577–583, Jun. 2020

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