

Navigating Eye to Blind People using Machine Learning

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Abstract: *In a world that heavily relies on visual information for navigation, visually impaired individuals face significant challenges in accessing and interacting with their environment. Everyday tasks, such as navigating unfamiliar places or recognizing objects, can become daunting and frustrating. However, advancements in artificial intelligence (AI) and computer vision have opened up new possibilities for improving the lives of visually impaired individuals. Navigating the eye to blind people using a machine learning system aims to bridge the gap between the visual world and the visually impaired people.*

Keywords: CNN, KNN, Machine learning, Disease Prediction

REFERENCES

- [1] Vision Loss Expert Group of the Global Burden of Disease Study. Trends in prevalence of blindness and distance and near vision impairment over 30 years: an analysis for the Global Burden of Disease Study. *Lancet Global Health* 2020. doi: 10.1016/S2214-109X(20)30425-3.
- [2] S. R. A. W. Alwi and M. N. Ahmad, "Survey on outdoor navigation system needs for blind people," 2013 IEEE Student Conference on Research and Development, Putrajaya, Malaysia, 2013, pp. 144-148, doi: 10.1109/SCORED.2013.7002560.
- [3] R. Ani, E. Maria, J. J. Joyce, V. Sakkaravarthy and M. A. Raja, "Smart Specs: Voice assisted text reading system for visually impaired persons using TTS method," 2017 International Conference on Innovations in Green Energy and Healthcare Technologies (IGEHT), Coimbatore, India, 2017, pp. 1-6, doi: 10.1109/IGEHT.2017.8094103.
- [4] Mande Shen and Hansheng Lei, "Improving OCR performance with background image elimination," 2015 12th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD), Zhangjiajie, China, 2015, pp. 1566-1570, doi: 10.1109/FSKD.2015.7382178.
- [5] K. Dhivya, G. Premalatha, and S. Monica, "Wearable Navigation Device for Virtual Blind Guidance," 2019 International Conference on Intelligent Computing and Control Systems (ICCS), Madurai, India, 2019, pp. 130-133, doi: 10.1109/ICCS45141.2019.9065816.
- [6] S. Zaman, M. A. Abrar, M. M. Hassan, and A. N. M. N. Islam, "A Recurrent Neural Network Approach to Image Captioning in Braille for Blind-Deaf People," 2019 IEEE International Conference on Signal Processing, Information, Communication Systems (SPICSCON), Dhaka, Bangladesh, 2019, pp. 49-53, doi: 10.1109/SPICSCON48833.2019.9065144.
- [7] Soh, Moses. "Learning CNN-LSTM architectures for image caption generation." Dept. Comput. Sci., Stanford Univ., Stanford, CA, USA, Tech. Rep (2016).
- [8] S. Sonth and J. S. Kallimani, "OCR-based facilitator for the visually challenged," 2017 International Conference on Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT), Mysuru, India, 2017, pp. 1-7, doi: 10.1109/ICEECCOT.2017.8284628.
- [9] T. Chattopadhyay, P. Sinha, and P. Biswas, "Performance of Document Image OCR Systems for Recognizing Video Texts on Embedded Platform," 2011 International Conference on Computational Intelligence and Communication Networks, Gwalior, India, 2011, pp. 606- 610, doi: 10.1109/CICN.2011.131.
- [10] Islam, N., Islam, Z. and Noor, N., 2016, 'A Survey on Optical Character Recognition System', *Journal of Information Communication Technology-JICT* Vol. 10 Issue. 2, December 2016

