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Sign Language to Text Language Conversion

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Abstract: *Sign language is a form of communication that uses gestures and gestures to convey meaning. We propose a new method to convert signed words into text. Our system is designed to enable deaf people to communicate with others in a simpler and more convenient way. The plan uses computer vision and deep learning to recognize gestures and translate them into appropriate text. The system was developed using MediaPipe for feature detection, data prioritization, logging, feature generation, and LSTM neural network training. This project has the potential to improve communication skills for the deaf and reduce communication problems with the rest of the world. The system uses key search algorithms such as MediaPipe to recognize traffic and convert it to the corresponding text using the Lstm format. The data collected from the language is preprocessed and then used to train an LSTM neural network to recognize gestures and generate text. This transformation not only helps the deaf and hard of hearing communicate with locals, but is also an aid to those trying to learn the language. Overall, the solution has the potential to improve communication and reduce problems for the deaf and hard of hearing.*

Keywords: Sign Language Character Recognition, Recurrent Neural Network, Computer Vision, Deep Learning

REFERENCES

[1] S. M Mahesh Kumar, “Conversion od Sign Language into Text,” International Journal of Applied Engineering Research ISSN 0973-4562 Volume 13, Number 9, 2018.
[2] Kohsheen Tiku, Jayshree Maloo, Aishwarya Ramesh, Indra R, “Real-time Conversion of Sign Language to Text and Speech,” 2020 Second International Conferenceon Inventive Research in Computing Applications, Coimbatore, India, 2020, pp. 346-351.
[3] C. Uma Bharti, G. Ragavi, K. Karthika \"Signtalk: Sign Language to Text and Speech Conversion,\" 2021 International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation (ICAECA), Coimbatore, India, 2021, pp. 1-4, doi: 10.1109/ICAECA52838.2021.9675751.
[4] M. Zamani and H. R. Kanan, \"Saliency based alphabet and numbers of American sign language recognition using linear feature extraction,\" 2014 4th International Conference on Computer and Knowledge Engineering (ICCKE), Mashhad, Iran, 2014, pp. 398-403, doi: 10.1109/ICCKE.2014.6993442.
[5] A. Saxena, D. K. Jain and A. Singhal, \"Sign Language Recognition Using Principal Component Analysis,\" 2014 Fourth International Conference on Communication Systems and Network Technologies, Bhopal, India, 2014, pp. 810-813, doi: 10.1109/CSNT.2014.168. [6] J. Zhang, W. Zhou, C. Xie, J. Pu and H. Li, \"Chinese sign language recognition with adaptive HMM,\" 2016 IEEE International Conference on Multimedia and Expo (ICME), Seattle, WA, USA, 2016, pp. 1-6, doi: 10.1109/ICME.2016.7552950.
[7] D. Guo, W. Zhou, M. Wang and H. Li, \"Sign language recognition based on adaptive HMMS with data augmentation,\" 2016 IEEE International Conference on Image Processing (ICIP), Phoenix, AZ, USA, 2016, pp. 2876-2880, doi: 10.1109/ICIP.2016.7532885.
[8] K. Grobel and M. Assan, \"Isolated sign language recognition using hidden Markov models,\" 1997 IEEE International Conference on Systems, Man, and Cybernetics. Computational Cybernetics and Simulation, Orlando, FL, USA, 1997, pp. 162-167 vol.1, doi: 10.1109/ICSMC.1997.625742.

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[9] D. Guo, W. Zhou, M. Wang and H. Li, \"Sign language recognition based on adaptive HMMS with data augmentation,\" 2016 IEEE International Conference on Image Processing (ICIP), Phoenix, AZ, USA, 2016, pp. 2876-2880, doi: 10.1109/ICIP.2016.7532885.

[10] D. Van Hieu and S. Nitsuwat, \"Image Preprocessing and Trajectory Feature Extraction based on Hidden Markov Models for Sign Language Recognition,\" 2008 Ninth ACIS International Conference on Software Engineering, Artificial Intelligence, Networking, and Parallel/Distributed Computing, Phuket, Thailand, 2008, pp. 501-506, doi: 10.1109/SNPD.2008.80