

Sign Language Detection

Prof. Dr. S Tamilarasan¹, Abhinay Kumar², Jabeen A I³, Mohammed Hisham⁴, Mohammed Mustafa⁵

Professor, Department of Information Science and Engineering¹

Students, Department of Information Science and Engineering^{2,3,4,5}

HKBK College of Engineering, Bangalore, India

Abstract: *Speech-impaired individuals use sign language to communicate, but since most people do not know sign language, there is a communication gap between them. The sophisticated technology of today can close this gap. A system that translates sign language into text or voice can be created using technologies like image processing and machine learning. Dumb individuals can benefit greatly from these systems since they can readily speak with anyone who is using them. This essay offers a succinct overview of the numerous research projects that have been done in this area thus far.*

Keywords: Indian Sign Language Recognition; Gesture Recognition; Sign Language Recognition; Grid-based feature extraction; k-Nearest Neighbours (k-NN); Hidden Markov Model (HMM); Kernelized Correlation Filter (KCF) Tracker; Histogram of Oriented Gradients (HOG)

REFERENCES

- [1] Microsoft, "Kinect Fact Sheet," 2010. [Online]. Available: www.microsoft.com/enus/news/presskits/xbox/docs/kinectfs.docx.
- [2] W. C. Stokoe, "Sign language structure: an outline of the visual communication systems of the American deaf. 1960.," J. Deaf Stud. Deaf Educ., vol. 10, no. 1, pp. 3–37, Jan. 2005.
- [3] World Federation of Deaf, "Convention on the Rights of Persons with Disabilities - Sign Language," 2013. [Online]. Available: <http://wfdeaf.org/human-rights/crpd/sign-language>.
- [4] Poulation Reference Bureau, "Population data sheet," 2013.
- [5] P. M. Lewis, G. F. Simons, and C. D. Fening, "Ethnologue: Languages of the world (17th edition)," 2013. [Online]. Available: <http://www.ethnologue.com/>. [Accessed: 03-Dec2013].
- [6] K. Emmorey, Language, cognition, and the brain: Insights from sign language research. Psychology Press, 2001.
- [7] "Myths and misconceptions about Sign Language." [Online]. Available: http://labspace.open.ac.uk/file.php/2467!/via/oucontent/course/166/d251_1blk1.24.pdf. [Accessed: 14-Dec-2013].
- [8] S. K. Liddell, Grammar, gesture, and meaning in American Sign Language. Cambridge University Press, 2003.
- [9] W. Sandler, Sign language and linguistic universals. Cambridge University Press, 2006. [10] R. Battison, "Lexical Borrowing in American Sign Language.," 1978.
- [11] S. Lang, M. Block, and R. Rojas, "Sign language recognition using kinect," Artif. Intell. Soft Comput., pp. 394–402, 2012.
- [12] U. Bellugi and S. Fischer, "A comparison of sign language and spoken language," Cognition, vol. 1, no. 2, pp. 173–200, 1972.
- [13] S. C. W. Ong and S. Ranganath, "Automatic sign language analysis: a survey and the future beyond lexical meaning.," IEEE Trans. Pattern Anal. Mach. Intell., vol. 27, no. 6, pp. 873–91, Jun. 2005.