

8. ACKNOWLEDGMENTS

This work was partially supported by National Science Foundation grants IIS-1055062 and IIS-1565328.

9. REFERENCES

- [1] V. Athitsos, C. Neidle, S. Sclaroff, J. Nash, A. Stefan, Q. Yuan, and A. Thangali. The american sign language lexicon video dataset. In *2008 IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops, CVPR Workshops*.
- [2] H. Cooper, B. Holt, and R. Bowden. Sign language recognition. In *Visual Analysis of Humans*, pages 539–562. Springer, 2011.
- [3] H. Cooper, E.-J. Ong, N. Pugeault, and R. Bowden. Sign language recognition using sub-units. *Journal of Machine Learning Research*, 13(Jul):2205–2231, 2012.
- [4] G. Fang and W. Gao. A srn/hmm system for signer-independent continuous sign language recognition. *Proceedings - 5th IEEE International Conference on Automatic Face Gesture Recognition, FGR 2002*, pages 312–317.
- [5] Q. He and C. Debrunner. Individual recognition from periodic activity using hidden markov models. In *Human Motion, 2000. Proceedings. Workshop on*, pages 47–52. IEEE, 2000.
- [6] O. Koller, O. Zargaran, H. Ney, and R. Bowden. Deep sign: Hybrid cnn-hmm for continuous sign language recognition. In *Proceedings of the British Machine Vision Conference 2016*, 2016.
- [7] W. W. Kong and S. Ranganath. Towards subject independent continuous sign language recognition: A segment and merge approach. *Pattern Recognition*, (3):1294–1308.
- [8] M. Müller. Chapter 4: Dynamic time warping. *Information Retrieval for Music and Motion*, pages 69–84.
- [9] S. Nayak, K. Duncan, S. Sarkar, and B. Loeding. Finding recurrent patterns from continuous sign language sentences for automated extraction of signs. *Journal of Machine Learning Research*, 13(Sep):2589–2615, 2012.
- [10] H. Pahwa. *Handling Periodic Signs in American Sign Language Using Synthetic Generation of Periods*. PhD thesis, University of Texas at Arlington, 2010.
- [11] L. Pigou, S. Dieleman, P.-J. Kindermans, and B. Schrauwen. Sign language recognition using convolutional neural networks. In *Workshop at the European Conference on Computer Vision*, pages 572–578. Springer, 2014.
- [12] A. Ruiz, D. H. Owens, and S. Townley. Existence, learning, and replication of periodic motions in recurrent neural networks. *IEEE Transactions on Neural Networks*, 9(4):651–661, 1998.
- [13] T. Starner and A. Pentland. Real-time american sign language recognition from video using hidden markov models. In *Motion-Based Recognition*, pages 227–243. Springer, 1997.
- [14] M. M. Süzgün, H. Özdemir, N. C. Camgöz, A. A. Kindiroğlu, D. Başaran, C. Togay, and L. Akarun. Hospisign: an interactive sign language platform for hearing impaired. *Deniz Bilimleri ve Mühendisliği Dergisi*, 11(3), 2015.
- [15] S. Theodorakis, V. Pitsikalis, and P. Maragos. Dynamic–static unsupervised sequentiality, statistical subunits and lexicon for sign language recognition. *Image and Vision Computing*, 32(8):533–549, 2014.
- [16] C. Valli. *The Gallaudet Dictionary of American Sign Language*. Gallaudet University Press, 2005.
- [17] U. Von Agris, D. Schneider, J. Zieren, and K.-F. Kraiss. Rapid signer adaptation for isolated sign language recognition. In *2006 Conference on Computer Vision and Pattern Recognition Workshop (CVPRW'06)*, pages 159–159. IEEE, 2006.
- [18] H. Wang, A. Stefan, S. Moradi, V. Athitsos, C. Neidle, and F. Kamangar. A system for large vocabulary sign search. In *European Conference on Computer Vision*, pages 342–353. Springer, 2010.
- [19] S. B. Wang, A. Quattoni, L.-P. Morency, D. Demirdjian, and T. Darrell. Hidden conditional random fields for gesture recognition. *Proceedings of IEEE Computer Vision and Pattern Recognition*, pages 1521–1527.