**Experiment Reports on ASL dataset**

Implementation Details:

- Paper implemented: <http://vlm1.uta.edu/~athitsos/publications/wang_sga2010.pdf>

- I have used python 3.6 for implementing the above paper

- Below I have compared my results with DTW and FastDTW (<http://cs.fit.edu/~pkc/papers/tdm04.pdf>)

- DTW matrix is calculated if and only if both the videos have dominant hands only or both the videos have dominant hands with non-dominants hands

- Training file used:

# TRAIN NOTATION = annotation\_gb1113.mat

# TRAIN HAND = handface\_manual\_gb1113.mat

- Testing files used:

# TEST NOTATION = annotation\_lb1113.mat

# TEST HAND = handface\_manual\_lb1113.mat

GITHUBLINK :

You can view the code at the following GITHUB link:

https://github.com/jayshah19949596/American\_Sign\_Language\_Recognition

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Experimental Results are as follows:

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# First time it took 4.625 hours ***[DTW]***

# Got an accuracy of 0.3926325247079964

# Features used only Dominant hands

# Got 437 videos correct out of 1113

# These results are with DTW

# Sixth time it took 2.3 hours ***[FAST DTW]***

# Got an accuracy of 0.39802336028751123

# Features used Dominant hands

# Got 443 videos correct out of 1113

# These results are with fast\_dtw

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# Second time it took 7.6 hours ***[DTW]***

# Got an accuracy of 0.48247978436657685

# Features used Dominant hands and Non-Dominant Hands

# Got 534 videos correct out of 1113

# These results are with DTW

# Fifth time it took 4.34 hours ***[FAST DTW]***

# Got an accuracy of 0.4950584007187781

# Features used Dominant hands, Non-Dominant Hands, and LDelta

# Got 599 videos correct out of 1113

# These results are with fast\_dtw

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# Third time it took 10.8 hours ***[DTW]***

# Got an accuracy of 0.5381850853548967

# Features used Dominant hands, Non-Dominant Hands, and LDelta

# Got 599 videos correct out of 1113

# These results are with DTW

# Fourth time it took 6.12 hours ***[FAST DTW]***

# Got an accuracy of 0.5381850853548967

# Features used Dominant hands, Non-Dominant Hands, and LDelta

# Got 599 videos correct out of 1113

# These results are with fast\_dtw

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# Eight time it took 11.09 hours

# Got an accuracy of 0.5579514824797843

# Features used Ld, Lnd, and Ldelta

# Got 621 videos correct out of 1113

# These results are with DTW

# ========================================================================

# Ninth time it took 11.09 hours

# Got an accuracy of 0.5669362084456424

# Features used [Ld, Lnd, Ldelta, Od, Ond, correct co-ordinates]

# Got 631 videos correct out of 1113

# These results are with DTW

Conclusion :

- FastDTW Is Faster than DTW and FastDTW gives almost same accuracy as DTW

- FastDTW can not perform better than DTW in terms of accuracy

- FastDTW takes almost half the time for training than what DTW takes

- If you see my last two experimental results Using 3 features Ld, Lnd, and Ldelta and using 5 features Ld, Lnd, Ldelta, Od, Ond didn’t give much difference in the accuracy but the accuracy did improve

- Everytime a new feature was added the accuracy of the program improved