**Case study: #14**

**Study of Best Algorithm Combinations for Speech**

**Processing Tasks in Machine Learning**

**Using Median vs. Mean Clusters in MARF**

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This case study concentrates on combinations of best algorithms to identify the different features of speaker like their gender, their accent etc. It uses concept of mean clusters and median clusters to find out the best possible combinations of algorithms. By using mean approach this study gives many best possible combinations does not give assurance that chosen combination is only the best one. There may be any other best solution left. This study has adapted SpeakerIdentApp of MARF (where MARF is collection of algorithms for audio and natural language text analysis) to get the results of various speech processing tasks. SpeakerIdentApp uses the disjoint set of training and test set to study the robustness of the algorithms. This application gathers many results of comparison between successful and unsuccessful guesses so second best approach came into picture because of possibility of inaccurate results at first time. To get the statistics of first and second guess, samples were properly trained and were tested on new features and then all these results and implementations are validated and verified to make it more efficient and flawless. In this study all speaker identification features are analyzed using median and mean clusters. This both clusters are used to get the clear picture and selection of median or mean is completely based on quality on gathered data and chosen algorithms. This study is helpful in many applications where human authentication is necessary and can be useful to get the best area of study according to our combination.