Practical 9 – Keystroke Devices

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Distance metric

1. Implement distance metric 3 from slide 49 on KD. Use 25 samples for creating the template, but "play" with the threshold for determining error (1) or not (0).

   (a) 1 points What is the EER for thresholds 1, 2, and 3

   Answer: The results for the EER listed are based on using the "threshold" value in the implemented code and NOT the threshold that is referred to in the GetEER.m code.

   For threshold = 1: 0.1287, for threshold = 2: 0.1335, and for threshold = 3: 0.1367.

   (b) 3 points Give the Matlab code for the implementation

   Answer: Please find the code attached in attachment "Dist_Metric_3.m".

Reference creation

2. Adapt the code for the reference creation such that it creates a template based on "mean with outlier removal".

   (a) 6 points Give the Matlab code for the implementation?

   Answer: Please find the code attached in attachment "MeanWithOutlierRemoval.m". The implementation aims to follow the notes from the lecture:

   ```
   1) Delete obvious outlier values, e.g. latencies more than 2 seconds
   2) With the remaining values do:
     a) Calculate mean and std
     b) Remove values that are more than k times std from mean
   3) If values are removed in step 2b, then repeat step 2
   Various stop criteria:
     a) All values within the given range
     b) Fixed number of repetitions
     c) Minimum amount of remaining values
   ```

   Since the stop criteria were not specified in the task, I chose to use option b) and set it to 3.