

Signature Verification with DTW and Group projects experiences

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Signature Verification with DTW: Features

Code very similar to previous project (keyword spotting with DTW)

Features:

- **Position horizontal (x)**
- **Position vertical (y)**
- **Pressure**
- **Distance (Δx and Δy)**

Feature vector normalized.

Signature Verification with DTW: Results

Applied DTW with 2 threads.

Full run	without Sakoe Band	with wide Sakoe Band	with narrow Sakoe Band
Precision:	91,7 %	58,52 %	62,52 %
Time:	3827.83 s	1555.04	739.73 s

Group projects experiences:

Team organization

Used primarily group chat in Telegram 

First project:

- Contained two tasks -> two groups of three members.

In general:

- Discussed proceeding with whole group after getting each task.
- Tasks chosen by team members based on time availability and strengths.
- Often exchanged challenges in smaller groups.

Group projects experiences:

Software organization

Divided software in different parts:

- **Data preprocessing** (-> only data of interest)
- **Parsing** (-> data in desired form)
- **Computing** (-> extract features from data)
- **Running the model** (-> compare signatures)
- **Outputting** (-> printing results)

Group projects experiences:

Software specials

Used libraries (sklearn and TensorFlow) for first task.

DTW with own code (using libraries like numpy for computing):

- **Very readable (comments if unclear)**
- **Easily adaptable**
- **Concurrent as numbers of threads can be defined in the code. (Changing from 2 to 4 threads increases speed by almost 50%.)**

Group projects experiences: Lessons learned

Software:

- **Different pattern recognition methods**
- **Different frameworks and libraries**
- **A lot of information can be found online**

Group

- **Writing understandable python code (applied DTW horizontally instead of vertically)**
- **Dependencies on work done by others brings challenges**
- **Knowledge exchange inside group very useful**

Questions

