Plan original

**Chap 2 : Time series metrics and metric learning**

1. Definition of a time series
2. Properties of a metric
   1. Unimodal metrics for time series
      * Amplitude-based metrics
      * Frequential-based metrics
      * Behavior-based metrics
      * Other metrics and Kernels for time series
   2. Time series alignment and dynamic programming approach
   3. Combined metrics for time series
   4. Metric learning
      * Review on metric learning work
      * Large Margin Nearest Neighbors (lmnn)
   5. Conclusion of the chapter

**Chap 3 : Multi-modal and Multi-scale Time series Metric Learning (M2TML)**

1. Motivations
2. Multi-modal and multi-scale dissimilarity space
3. M2TML general problem
   * + General formalization for M2TML
     + Push and pull set definition
4. Linear formalization for M2TML
5. Quadratic formalization for M2TML
   * + Primal and dual formalization
     + Non-linear combined metric
     + Link between SVM and the quadratic formalization
6. SVM-based formalization for M2TML
   * + Support Vector Machine (svm) resolution
     + Linearly separable Pull and Push sets
     + Non-linearly separable Pull and Push sets
7. SVM-based solution and algorithm for M2TML
8. 3.8 Conclusion

Proposition de plan

**Chap 2 : Time series metrics**

But :

A/ Faire une « boîte à outils » sur les métriques pour ST

B/ Montrer la limite des combinaisons a priori

1. Definition of a time series
2. ***Generalities on metrics***
   * + ***Properties of a metric***
     + ***Representation of a metric***
3. Unimodal metrics for time series
   * + Amplitude-based metrics
     + Frequential-based metrics
     + Behavior-based metrics
     + Other metrics and Kernels for time series
4. Time series alignment and dynamic programming approach
5. Combined metrics for time series
   * + ***Combination functions***
     + ***Impact of normalization***
6. Conclusion of the chapter

**Chap 3 : Multi-modal and Multi-scale Time series Metric Learning (M2TML)**

1. Motivations
2. ***Large Margin Nearest Neighbors (lmnn) framework***
3. Multi-modal and multi-scale dissimilarity space
   * + ***Pairwise embedding***
     + ***Multi-scale description for time series***
     + ***Interpretation in the dissimilarity space***

But : ne parler que de metric learning

Et pouvoir raccrocher mieux à Weinberger

1. M2TML general problem
   * + General formalization for M2TML
     + Push and pull set definition
     + ***Interpretation in the dissimilarity space***
2. Linear formalization for M2TML
3. Quadratic formalization for M2TML
   * + Primal and dual formalization
     + Non-linear combined metric
     + Link between SVM and the quadratic formalization
4. SVM-based formalization for M2TML
   * + Support Vector Machine (svm) resolution
     + Linearly separable Pull and Push sets
     + Non-linearly separable Pull and Push sets
5. SVM-based solution and algorithm for M2TML
6. 3.8 Conclusion