

Plan original

Chap 2 : Time series metrics and metric learning


1. Definition of a time series
2. Properties of a metric
- 2.3 Unimodal metrics for time series
 - Amplitude-based metrics
 - Frequential-based metrics
 - Behavior-based metrics
 - Other metrics and Kernels for time series
- 2.4 Time series alignment and dynamic programming approach
- 2.5 Combined metrics for time series
- 2.6 Metric learning
 - Review on metric learning work
 - Large Margin Nearest Neighbors (lmnn)
- 2.7 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

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**
4. M2TML general problem
 - General formalization for M2TML 
 - Push and pull set definition
 - **Interpretation in the dissimilarity space**
5. Linear formalization for M2TML
6. Quadratic formalization for M2TML
 - Primal and dual formalization
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 - Link between SVM and the quadratic formalization
7. SVM-based formalization for M2TML
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9. 3.8 Conclusion

But :

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

B/ Montrer la
limite des
combinaisons
a priori

But : ne
parler que de
metric
learning

Et pouvoir
raccrocher
mieux à
Weinberger