

Année Universitaire : 2025/2026 Master 2 : SII Module : TALN	Université des Sciences et de la Technologie Houari Boumediene Faculté d'Informatique Département d'Intelligence Artificielle et Sciences des Données	TP N°5 Text Classification Part 3
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## Text Classification using Logistic Regression:

### 1. Data:

The data are attached with these folders:

#### Training Data:

Folder: All-in-many/

Description: 117 articles (titles and abstract) of Volume 18 of Evolutionary Intelligence Journal.

#### Training Data Labeling:

Folder: All-in-many\_classification/

Description: Four classes available :

1<sup>st</sup> class : Metaheuristics

2<sup>nd</sup> class : Machine & Deep Learning

3<sup>rd</sup> class : Combination of Metaheuristics & Machine/Deep Learning

4<sup>th</sup> class : Others

#### Testing Data:

Folder: All-in-many\_classification\_testing/

Description: 41 articles (titles and abstract) of Volumes 17 and 14 of Evolutionary Intelligence Journal with labels.

#### Attribute Data:

Folder: Attributes/

Description: This folder contains 18 attribute files. Each file includes a set of related word sequences.

### 2. Training Data as Instances :

- Each training article  $i$  is represented as an instance with 18 attributes (features). The value of attribute  $j$  corresponds to the number of occurrences of all word sequences listed in attribute file  $j$  within article  $i$ .
- The representation of each training instance, as well as the word sequences in the attribute files, must consider the chosen normalization method.

### 3. Implementation :

Representing training data as instances of 18 attributes (features)

#### Logistic Regression

Volume n°:  - +

Content of one volume  Content of all articles

Normalization Porter Stemmer

Visualization

Instances

Training

Testing

Test article n°:  - +

Article	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	Label
no. 1	5	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1
no. 2	0	0	0	0	0	0	0	0	0	5	7	0	3	4	0	4	0	0	2
no. 3	4	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1
no. 4	5	0	3	0	6	3	0	1	0	0	0	0	0	0	0	0	0	0	1
no. 5	1	0	2	2	2	0	0	1	1	0	0	0	1	0	0	0	0	0	1
no. 6	2	0	2	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1
no. 7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4