Assignment 3

Natural Language Processing

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The results of training different types of Transition parser are given below:

With Morphological features:

Arc-Standard Parser:

SVM classifier accuracy :	Unabeled – 0.913	Labeled – 0.833
Logistic Regression accuracy :	Unabeled – 0.868	Labeled – 0.771
MLP classifier accuracy :	Unabeled – 0.859	Labeled – 0.761

Arc-Eager Parser:

SVM classifier accuracy :	Unabeled – 0.911	Labeled – 0.825
Logistic Regression accuracy :	Unabeled – 0.904	Labeled – 0.805
MLP classifier accuracy :	Unabeled – 0.868	Labeled – 0.765

Without Morphological features:

Arc-Standard Parser:

SVM classifier accuracy :	Unabeled – 0.846	Labeled – 0.763
Logistic Regression accuracy :	Unabeled – 0.797	Labeled – 0.686
MLP classifier accuracy :	Unabeled – 0.802	Labeled – 0.688

Arc-Eager Parser:

SVM classifier accuracy :	Unabeled – 0.871	Labeled – 0.773
Logistic Regression accuracy :	Unabeled – 0.847	Labeled – 0.731
MLP classifier accuracy :	Unabeled – 0.829	Labeled – 0.705

We notice from above that the unlabeled accuracies are higher than labeled ones. Usuallly Arc-Eager parser gives better accuracies than Arc-Standard Parser. SVM seems to beat all other models for our case. We can get better performance from MLP by usning deeper networks with proper parameters.