

Arc-Standard Transition											
Train & Test files	Classifier type	All features		w/o Morphological features		w/o Word features		w/o Lemma feature		w/o POS-tag	
		LAS	UAS	LAS	UAS	LAS	UAS	LAS	UAS	LAS	UAS
Eng - Eng	SVC	0.8009	0.7153	0.8204	0.7338	0.8275	0.7432	0.8279	0.7384	0.7654	0.6857
	Logistic	0.8013	0.7131	0.7925	0.7047	0.7929	0.7162	0.7947	0.7086	0.7299	0.6364
	MLP	0.7854	0.7051	0.7774	0.7016	0.8035	0.7233	0.7933	0.7122	0.7171	0.6341
Eng – Sp	SVC	0.0466	0.0022	0.0434	0.0004	0.0705	0.0061	0.0589	0.0116	0.0430	0.0004
	Logistic	0.4324	0.2784	0.1623	0.0101	0.4563	0.2972	0.4718	0.3059	0.3442	0.2408
	MLP	0.4006	0.2545	0.2350	0.0268	0.3051	0.1667	0.4939	0.2946	0.2834	0.1732
Sp – Sp	SVC	0.6688	0.6124	0.6385	0.5521	0.6142	0.5535	0.7039	0.6482	0.6670	0.6110
	Logistic	0.7003	0.6399	0.6573	0.5647	0.6721	0.6229	0.6815	0.6244	0.6985	0.6385
	MLP	0.7176	0.6388	0.6793	0.5832	0.6699	0.5976	0.7017	0.6359	0.7162	0.6323
Sp - Eng	SVC	0.1157	0.0053	0.2692	0.0860	0.1778	0.0222	0.3055	0.0789	0.0887	0.0049
	Logistic	0.2532	0.1246	0.3645	0.1450	0.2882	0.1428	0.2909	0.1339	0.0758	0.0035
	MLP	0.2324	0.1242	0.1889	0.0776	0.2528	0.1282	0.2887	0.1401	0.0732	0.0004

Analysis:

- In general Arc-eager transition is producing better accurate results.
- For any classifier in general, always LAS > UAS i.e. the labeled attachment score is higher than unlabeled attachment score.
- For English training and test sets, SVC is the best classifier whereas for Spanish training and test sets, MLP was the best classifier.
- For both the cases of English-training & Spanish-testing, Spanish-training & English-testing sets, Logistic regression performed well than the other two.
- For English – English case, POS tag is the most important feature because of highest decrement in LAS & UAS scores and without lemma there isn't much decrease in the scores. So, lemma is the least important feature in this case.
- For Spanish – Spanish case, Morphological and word features are both important features whereas lemma is the least important one.

Arc- Eager Transition											
Train & Test files	Classifier type	All features		w/o Morphological features		w/o Word features		w/o Lemma feature		w/o POS-tag	
		LAS	UAS	LAS	UAS	LAS	UAS	LAS	UAS	LAS	UAS
Eng - Eng	SVC	0.8102	0.7339	0.8173	0.7437	0.8213	0.7434	0.8142	0.7348	0.7650	0.6860
	Logistic	0.8102	0.7375	0.8027	0.7282	0.8062	0.7251	0.7978	0.7251	0.7494	0.6652
	MLP	0.7902	0.7091	0.7836	0.7047	0.7965	0.7122	0.7845	0.7055	0.7215	0.6359
Eng – Sp	SVC	0.0488	0.0047	0.0437	0.0011	0.0752	0.0155	0.06	0.0141	0.0452	0.0043
	Logistic	0.1515	0.0701	0.0813	0.0069	0.0976	0.0286	0.12	0.0528	0.414	0.2531
	MLP	0.2545	0.1439	0.1443	0.0116	0.1182	0.0401	0.3821	0.2527	0.2679	0.1782
Sp – Sp	SVC	0.7021	0.6569	0.6591	0.5752	0.7035	0.6511	0.7050	0.6594	0.7021	0.6555
	Logistic	0.7173	0.6670	0.6544	0.5741	0.6963	0.6482	0.6960	0.6457	0.7173	0.6670
	MLP	0.7025	0.6421	0.6649	0.5738	0.7119	0.6544	0.7017	0.6396	0.6992	0.6406
Sp - Eng	SVC	0.1344	0.0217	0.2918	0.1069	0.1827	0.0346	0.2253	0.0492	0.0816	0.0106
	Logistic	0.2603	0.1211	0.2514	0.0980	0.2470	0.1304	0.2692	0.1149	0.1162	0.0279
	MLP	0.2435	0.1082	0.2532	0.0749	0.2492	0.1175	0.2936	0.1251	0.0993	0.0146