

### Mean Average Error on 10 samples across various algorithms

## User Based Similarity

City	Algorithm - TF-IDF							
Charlotte	0.40361322	0.4247391	0.297557	0.311847545	0.368525	0.421793	0.382852	0.384308
Pittsburgh	0.30971454	0.4094721	0.3961642	0.31555691	0.266891	0.242482	0.464577	0.343238
Scottsdale	0.35099046	0.5379218	0.3710859	0.409693834	0.591254	0.336283	0.346453	0.356932

City	Algorithm - NMF							
Charlotte	0.40564841	0.4304049	0.3934629	0.308001431	0.383628	0.43276	0.380293	0.390887
Pittsburgh	0.37266974	0.389814	0.3109651	0.331431696	0.234519	0.251267	0.3689	0.378071
Scottsdale	0.32826142	0.459682	0.4650315	0.337551995	0.505904	0.303088	0.443872	0.350394

City	Algorithm - Doc2Vec							
Charlotte	0.40361322	0.4247391	0.250635	0.464581092	0.261859	0.368961	0.382852	0.384308
Pittsburgh	0.40033775	0.3800848	0.5090837	0.250870527	0.306602	0.259266	0.349671	0.264831
Scottsdale	0.39062083	0.533884	0.5706222	0.3148384	0.624842	0.348362	0.425838	0.332684

City	Algorithm - Base Error							
Charlotte	0.40564841	0.4304049	0.3934629	0.308001431	0.383628	0.43276	0.380293	0.390887
Pittsburgh	0.32821938	0.4462641	0.4012969	0.344200511	0.314088	0.213359	0.510478	0.299924
Scottsdale	0.43507446	0.5379083	0.5326969	0.333532495	0.641249	0.34928	0.547621	0.436382

## Item Based Similarity

City	Algorithm - NMF							
Charlotte	0.33893721	0.2938712	0.3525679	0.324467005	0.412722	0.394951	0.410487	0.369336
Pittsburgh	0.24950238	0.271549	0.2329647	0.3225996	0.27533	0.322827	0.272254	0.264321
Scottsdale	0.39796189	0.3706811	0.3293566	0.335960213	0.371089	0.336717	0.370602	0.332315

City	Algorithm - TF-IDF							
Charlotte	0.32785281	0.3770922	0.399168	0.403591956	0.391123	0.335762	0.31477	0.369336
Pittsburgh	0.23296465	0.2495024	0.2753296	0.322827056	0.264321	0.315494	0.27429	0.214321
Scottsdale	0.29576759	0.3359602	0.3293566	0.324522097	0.349238	0.336717	0.360924	0.340435

City	Algorithm - Doc2Vec							
Charlotte	0.44768695	0.4036615	0.3775711	0.377435598	0.342965	0.379248	0.33653	0.327707
Pittsburgh	0.33311937	0.2884245	0.321665	0.320221331	0.325869	0.317137	0.31222	0.325753
Scottsdale	0.35439399	0.4076398	0.3602442	0.382359003	0.347617	0.377538	0.378538	0.459053

City	Algorithm - Base Error							
Charlotte	0.33893721	0.2938712	0.3525679	0.324467005	0.412722	0.394951	0.410487	0.369336
Pittsburgh	0.24950238	0.271549	0.2329647	0.3225996	0.27533	0.322827	0.272254	0.264321
Scottsdale	0.39796189	0.3706811	0.3293566	0.335960213	0.371089	0.336717	0.370602	0.332315

City	Algorithm - Matrix Factorization using Apache Spark ALS Implementation
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Charlotte	1.0803627	1.0954316	1.081521	1.097892358	1.077224	1.082551	1.08817	1.079008
Pittsburgh	1.03356586	1.036523	1.036937	1.036936983	1.026224	1.026224	1.038291	1.038676
Scottsdale	1.09423465	1.0954962	1.1053203	1.086576636	1.097023	1.100458	1.103021	1.100617

City	Number of points			
	Training	Validation	Testing	Sample Size (80% of Tesing
Charlotte	23746	6136	11188	8951
Pittsburgh	18570	5665	9226	7381
Scottsdale	18387	3707	5371	4297

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0.316934	0.403965
0.366555	0.349266
0.350443	0.319199

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0.345483	0.390997
0.426084	0.190239
0.322415	0.272653

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0.324113	0.403965
0.253556	0.344295
0.325764	0.378348

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0.345483	0.390997
0.375522	0.352662
0.334644	0.425367

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0.341958	0.400924
0.271997	0.324203
0.35072	0.338788

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0.394951	0.341958
0.281125	0.302135
0.350923	0.304324

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0.330068	0.361763
0.328661	0.289624
0.374929	0.380013

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0.341958	0.400924
0.271997	0.324203
0.35072	0.338788

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1.081465	1.087179
1.037686	1.031738
1.082285	1.083035