URL Coursework 1: Clustering
Agglomerative clustering via maximum incremental path integral [1]

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Abstract

Your abstract here.

1 Introduction

Introduce the study of this project.

2 Path Integral Clustering

2.1 PIC Algorithm

Explain the algorithm itself.

2.2 Implementation

Explain the algorithm implementation here.

3 Experiments

Experiments and difficulties.

Algorithm	**MNIST**	**USPS**	**Caltech-256**
PIC	**0.940**	0.835	**0.653**
k-med	0.318	0.553	0.315
A-link	0.408	0.139	0.313
S-link	0.002	0.002	0.019
C-link	0.539	0.374	0.395
AP	0.426	0.525	0.492
NCuts	0.807	0.772	0.589
NJW	0.898	0.784	0.529
CT	0.634	0.439	0.181
Zell	0.913	0.846	0.343
C-kernel	0.780	0.768	0.521
D-kernel	0.903	**0.846**	0.508

Table 1: NMI Scores

Algorithm	**MNIST**	**USPS**	**Caltech-256**
PIC	**0.016**	0.269	0.307
k-med	0.534	0.373	0.607
A-link	0.573	0.778	0.665
S-link	0.779	0.833	0.828
C-link	0.280	0.601	0.507
AP	0.960	0.934	0.705
NCuts	0.115	0.356	0.328
NJW	0.033	0.269	**0.290**
CT	0.493	0.615	0.747
Zell	0.027	0.197	0.680
C-kernel	0.129	0.269	0.368
D-kernel	0.029	**0.132**	0.315

Table 2: CE Scores

4 Conclusion

Your conclusion here.

References

[1] Wei Zhang, Deli Zhao, and Xiaogang Wang. Agglomerative clustering via maximum incremental path integral. *Pattern Recognition*, 46(11):3056–3065, 2013.