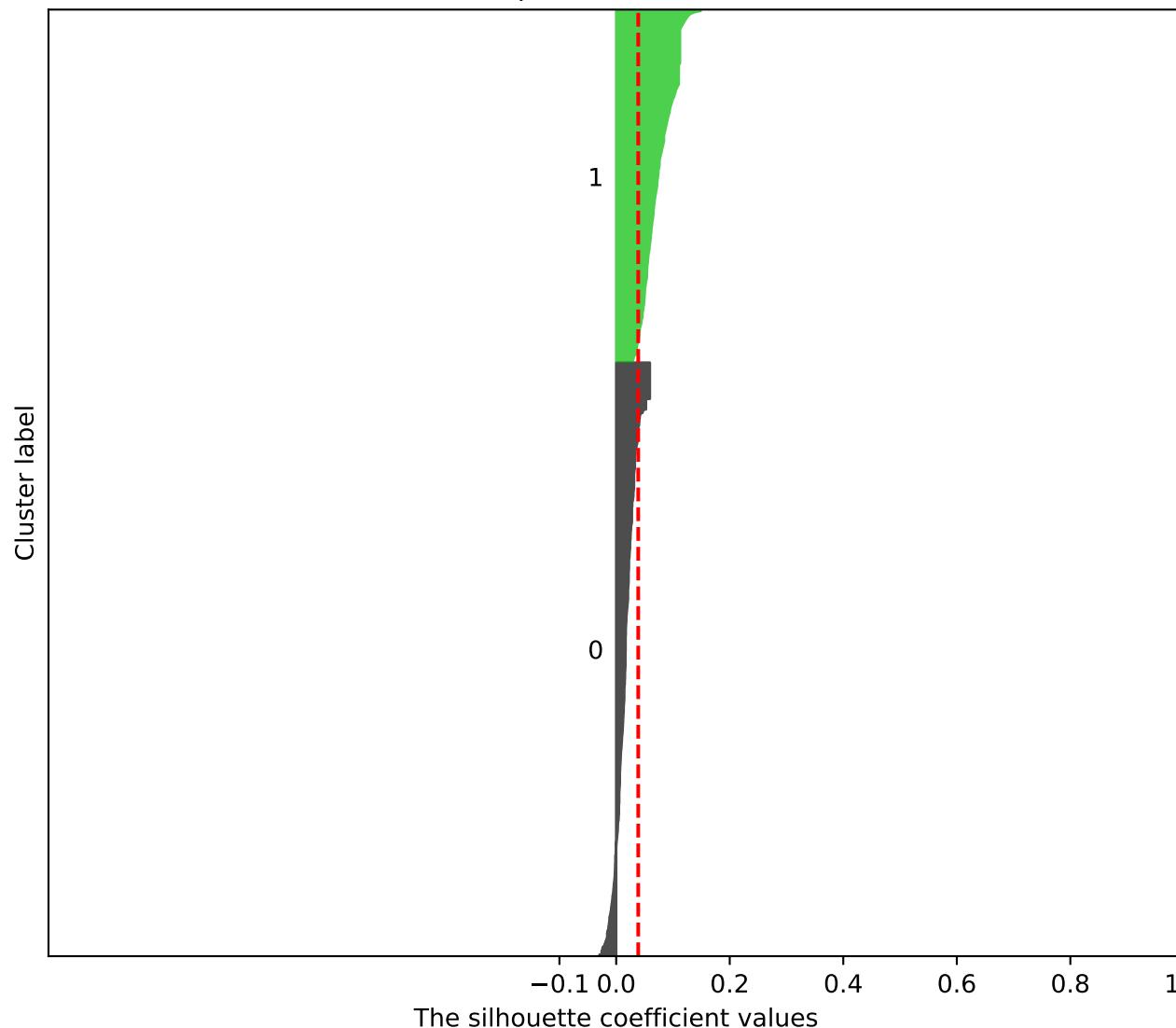
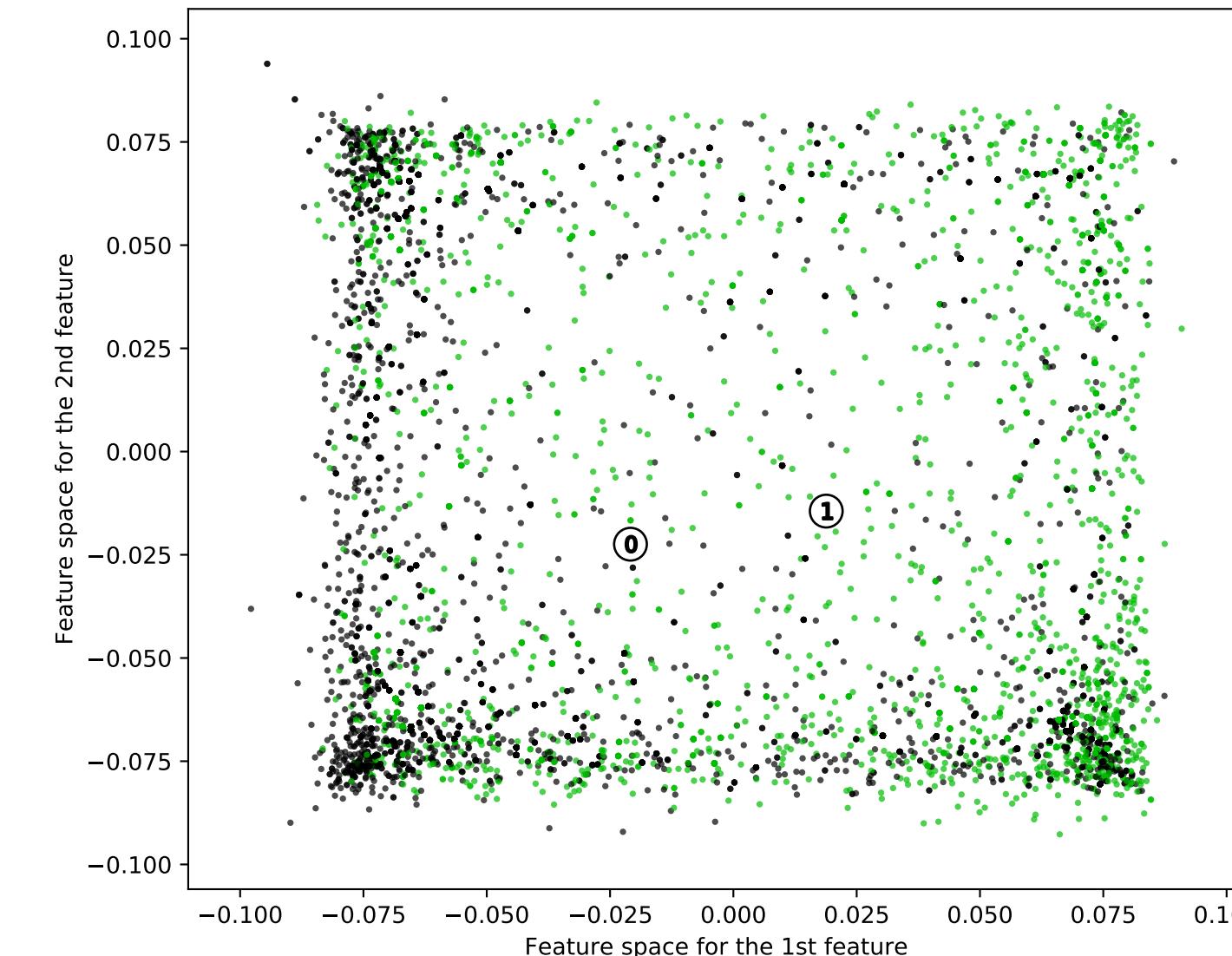


Silhouette analysis for KMeans clustering on sample data with n_clusters = 2 with Average Silhouette of: 0.03885425627231598

The silhouette plot for the various clusters.

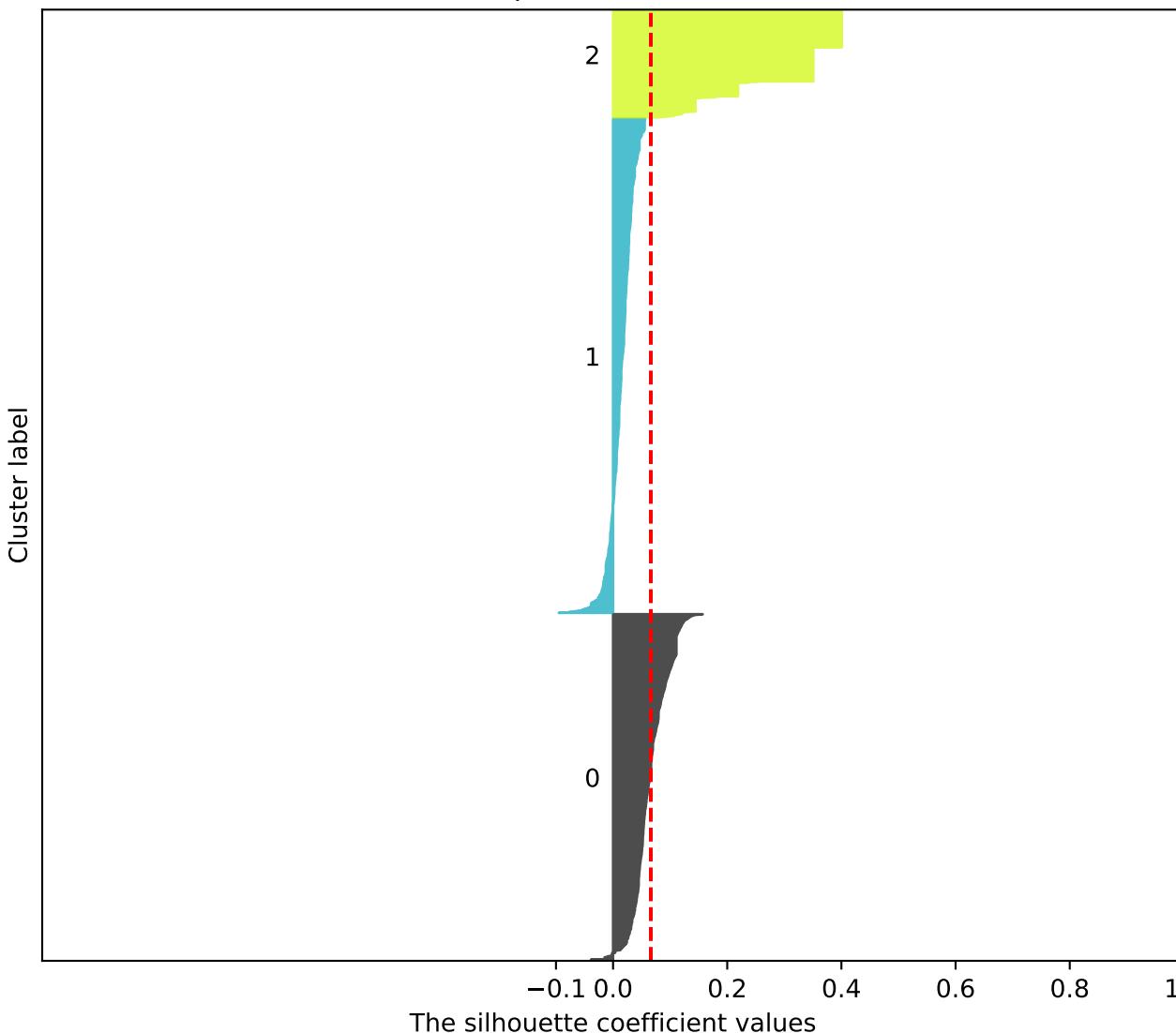


The visualization of the clustered data.

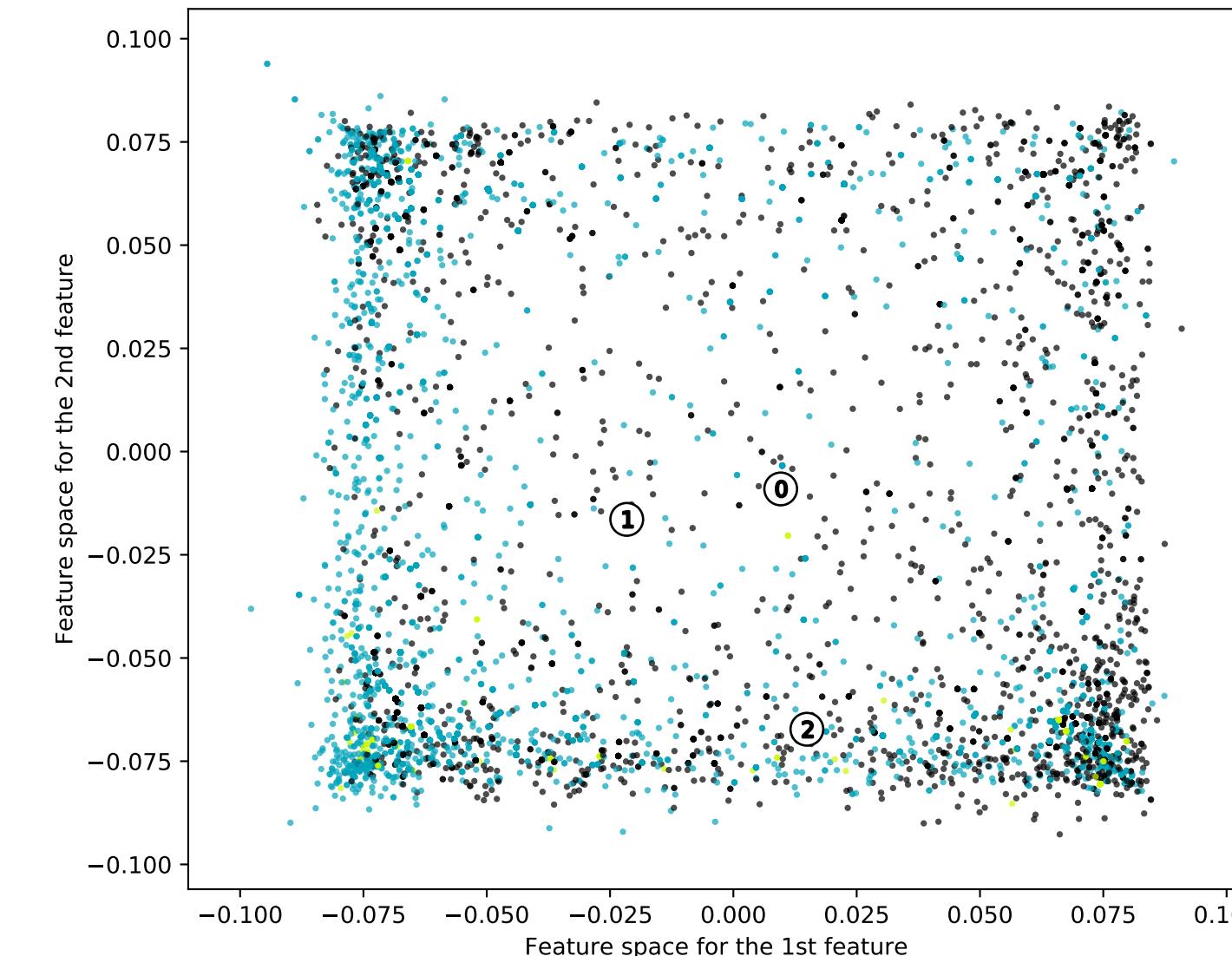


Silhouette analysis for KMeans clustering on sample data with n_clusters = 3 with Average Silhouette of: 0.06616014987230301

The silhouette plot for the various clusters.

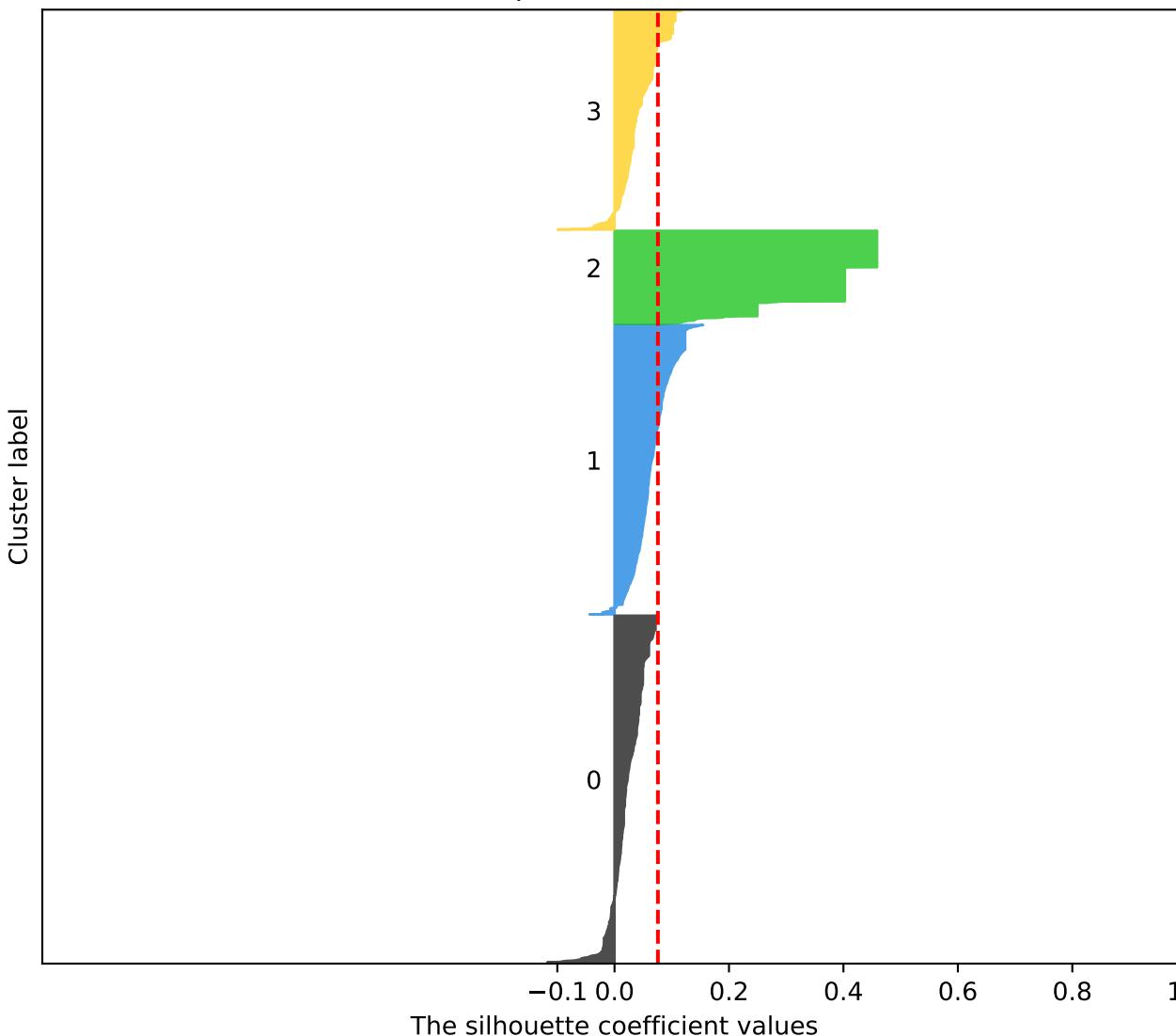


The visualization of the clustered data.

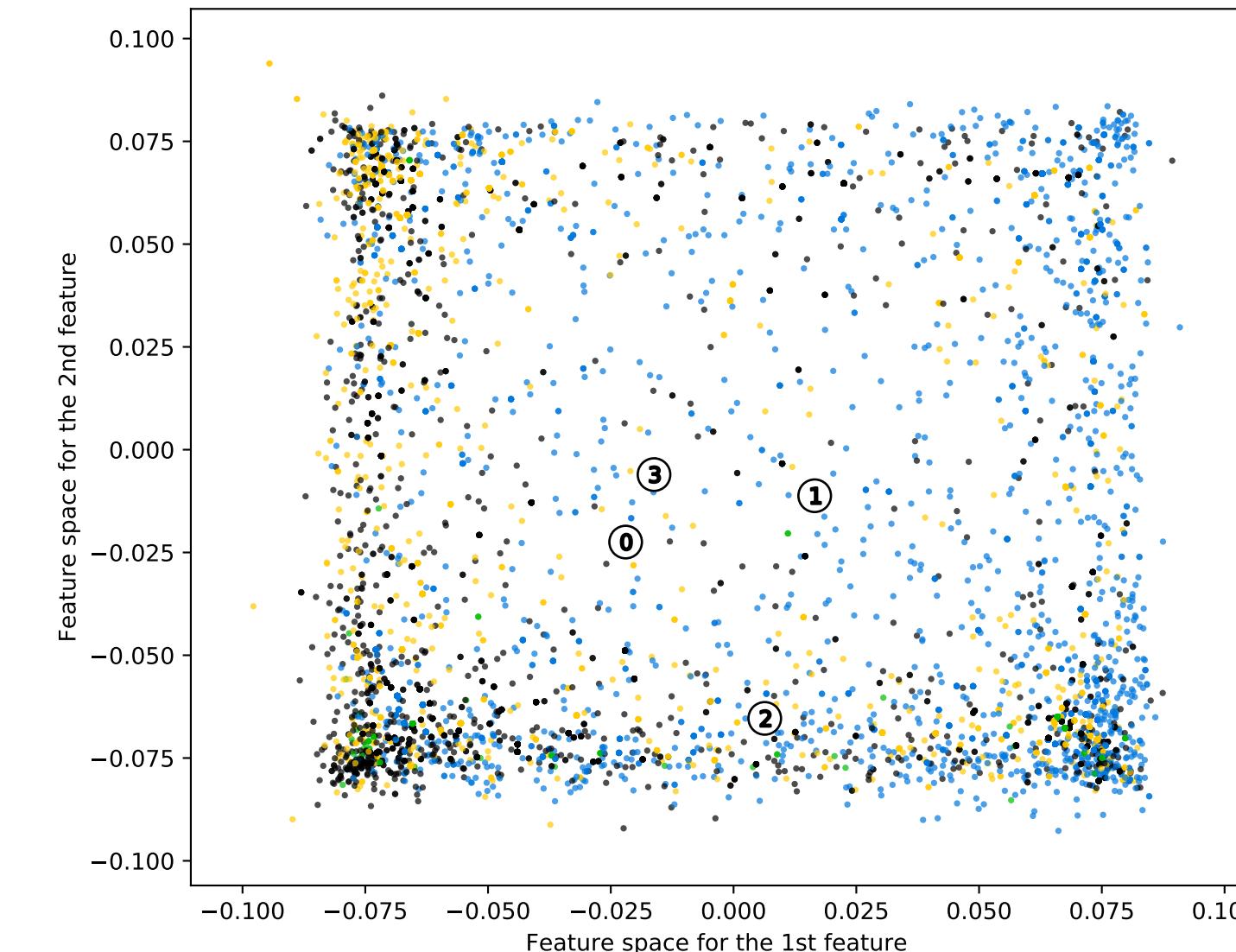


Silhouette analysis for KMeans clustering on sample data with n_clusters = 4 with Average Silhouette of: 0.07579387724399567

The silhouette plot for the various clusters.

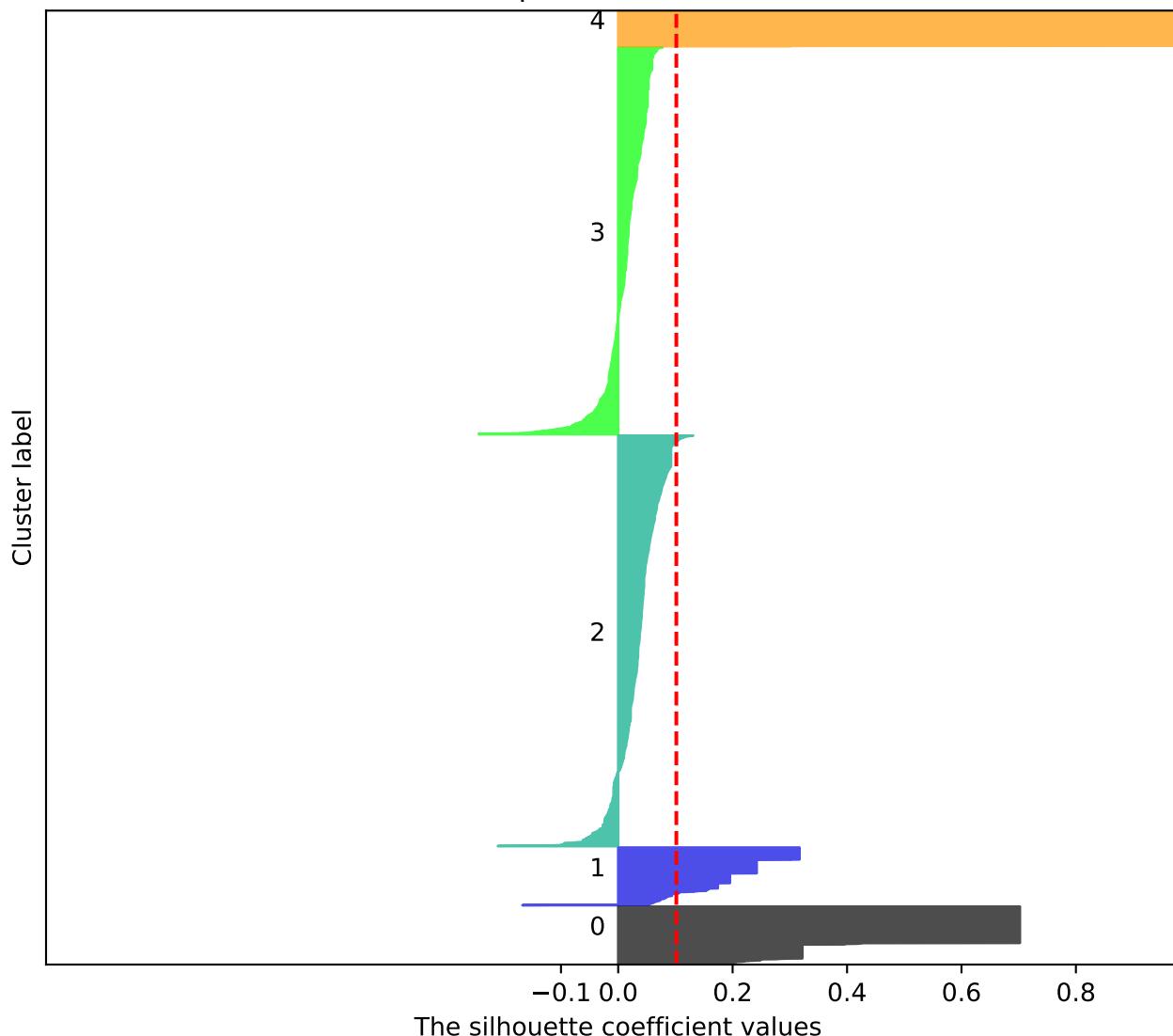


The visualization of the clustered data.

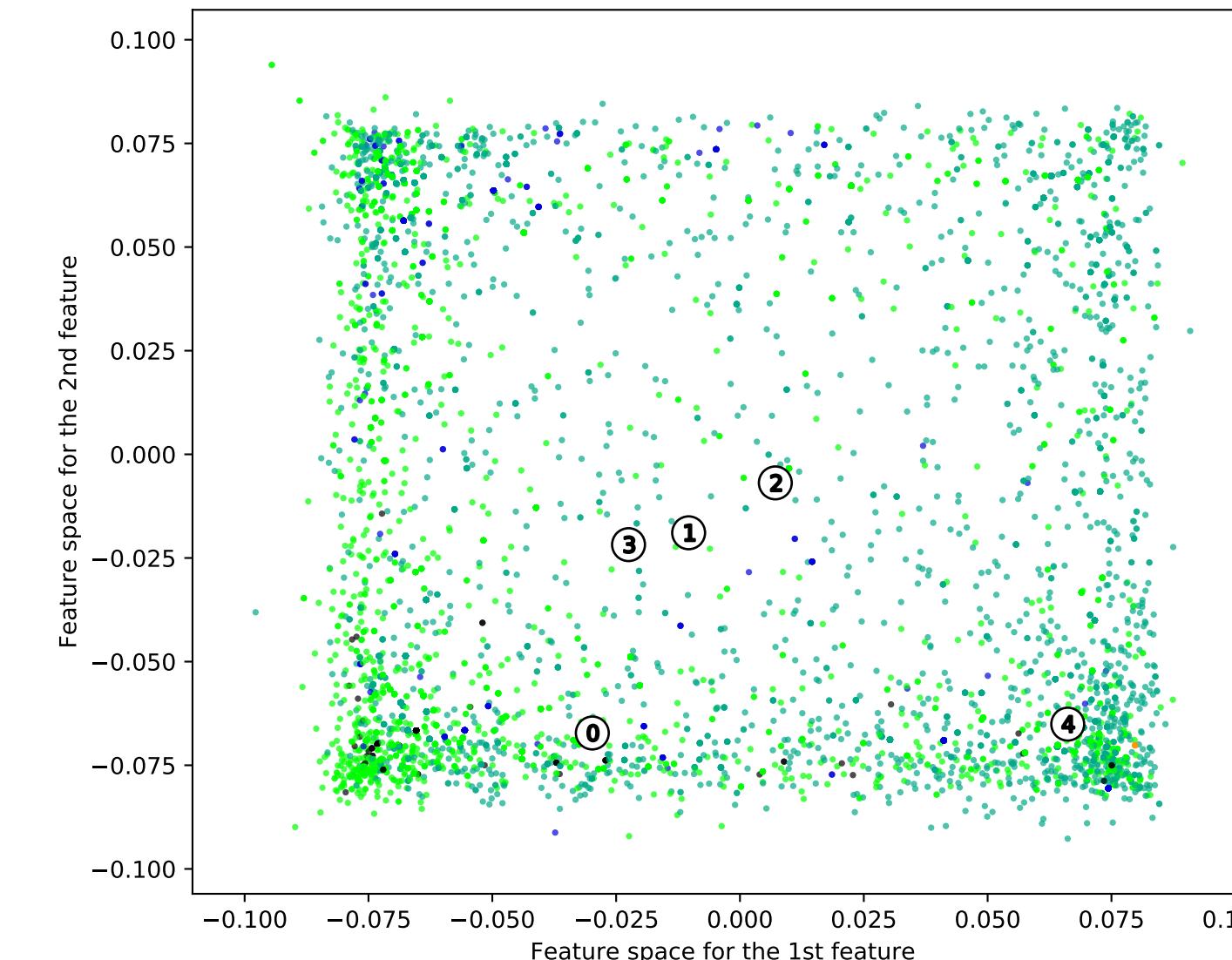


Silhouette analysis for KMeans clustering on sample data with n_clusters = 5 with Average Silhouette of: 0.10160111635923386

The silhouette plot for the various clusters.

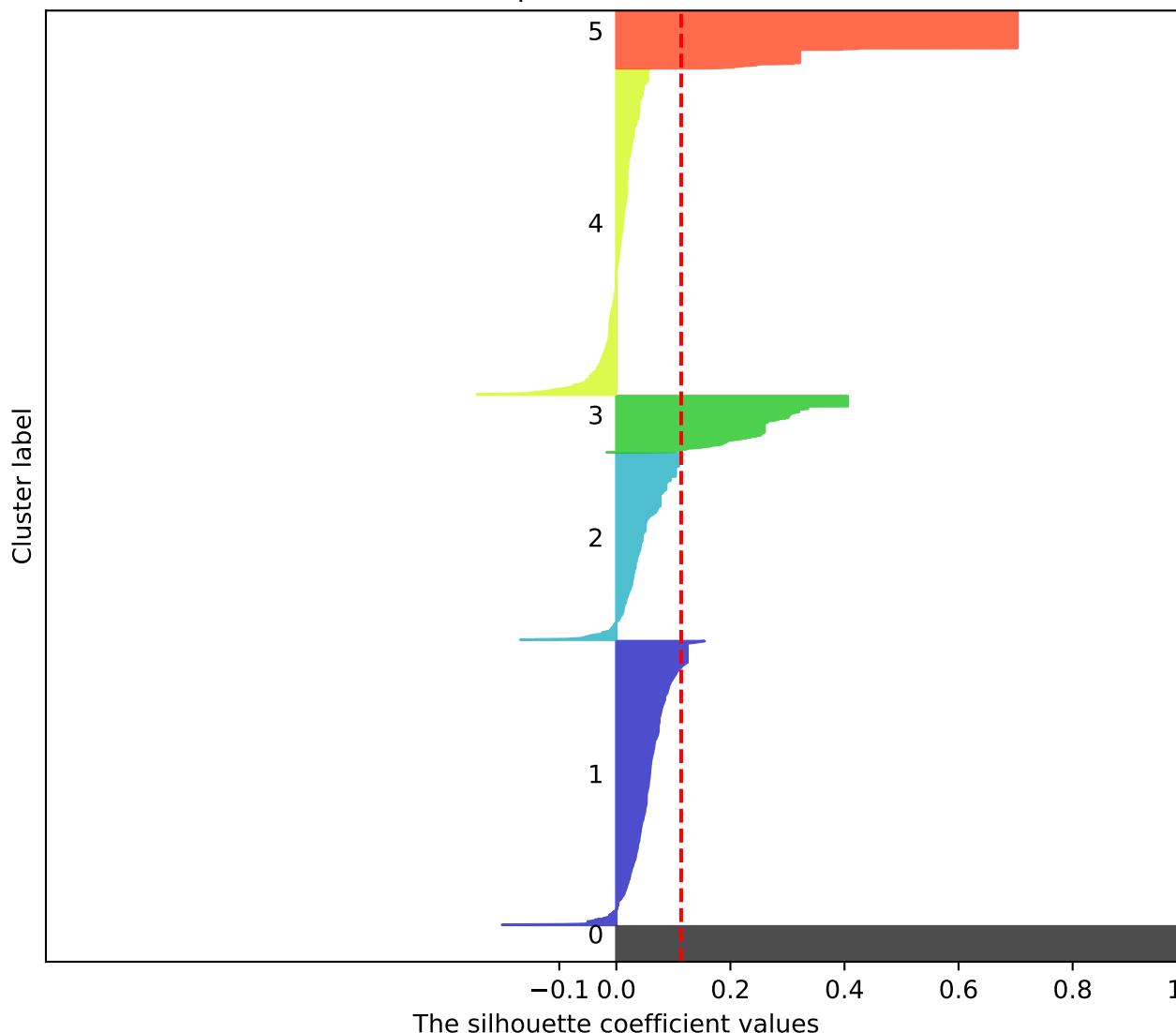


The visualization of the clustered data.

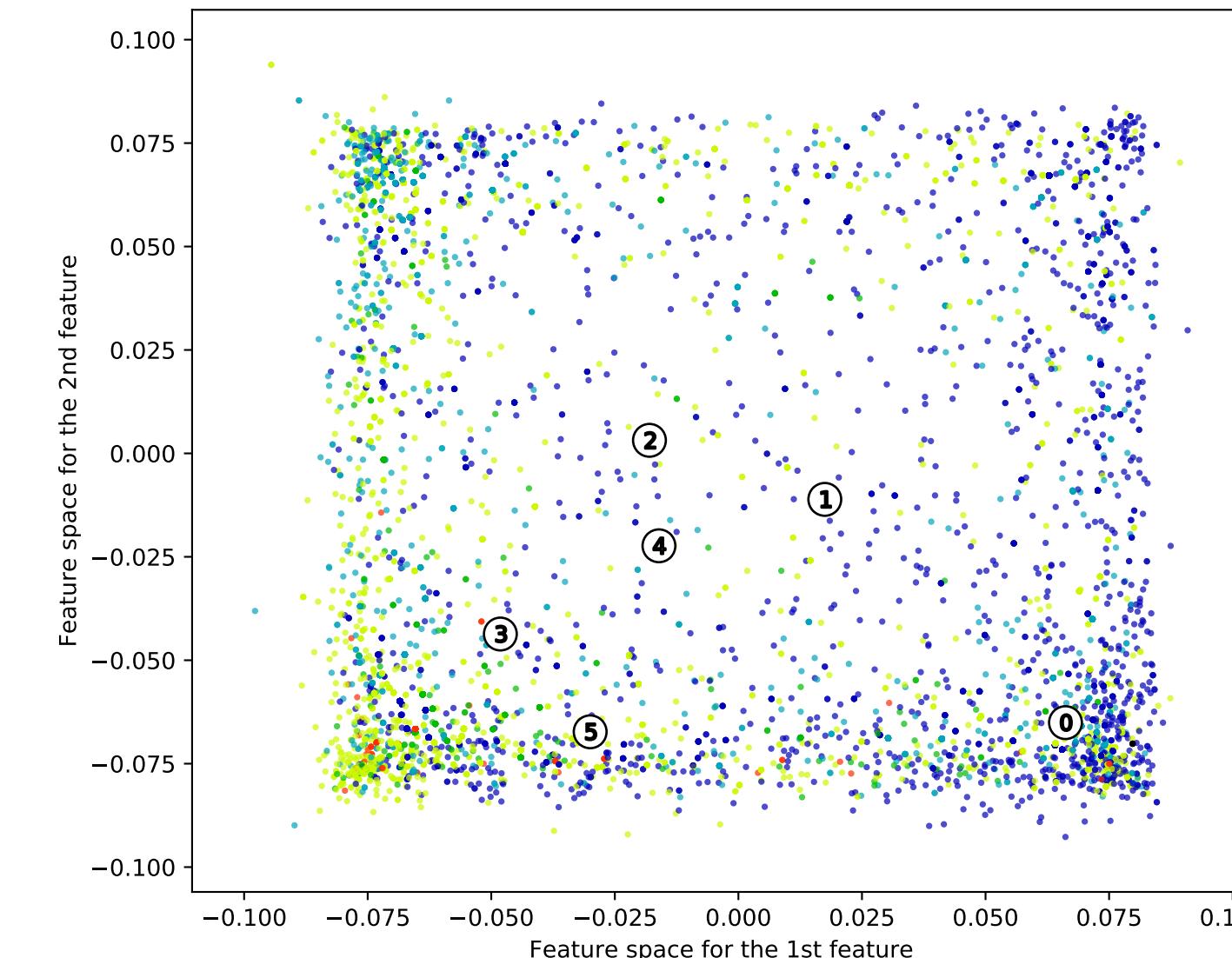


Silhouette analysis for KMeans clustering on sample data with n_clusters = 6 with Average Silhouette of: 0.11374910175800323

The silhouette plot for the various clusters.

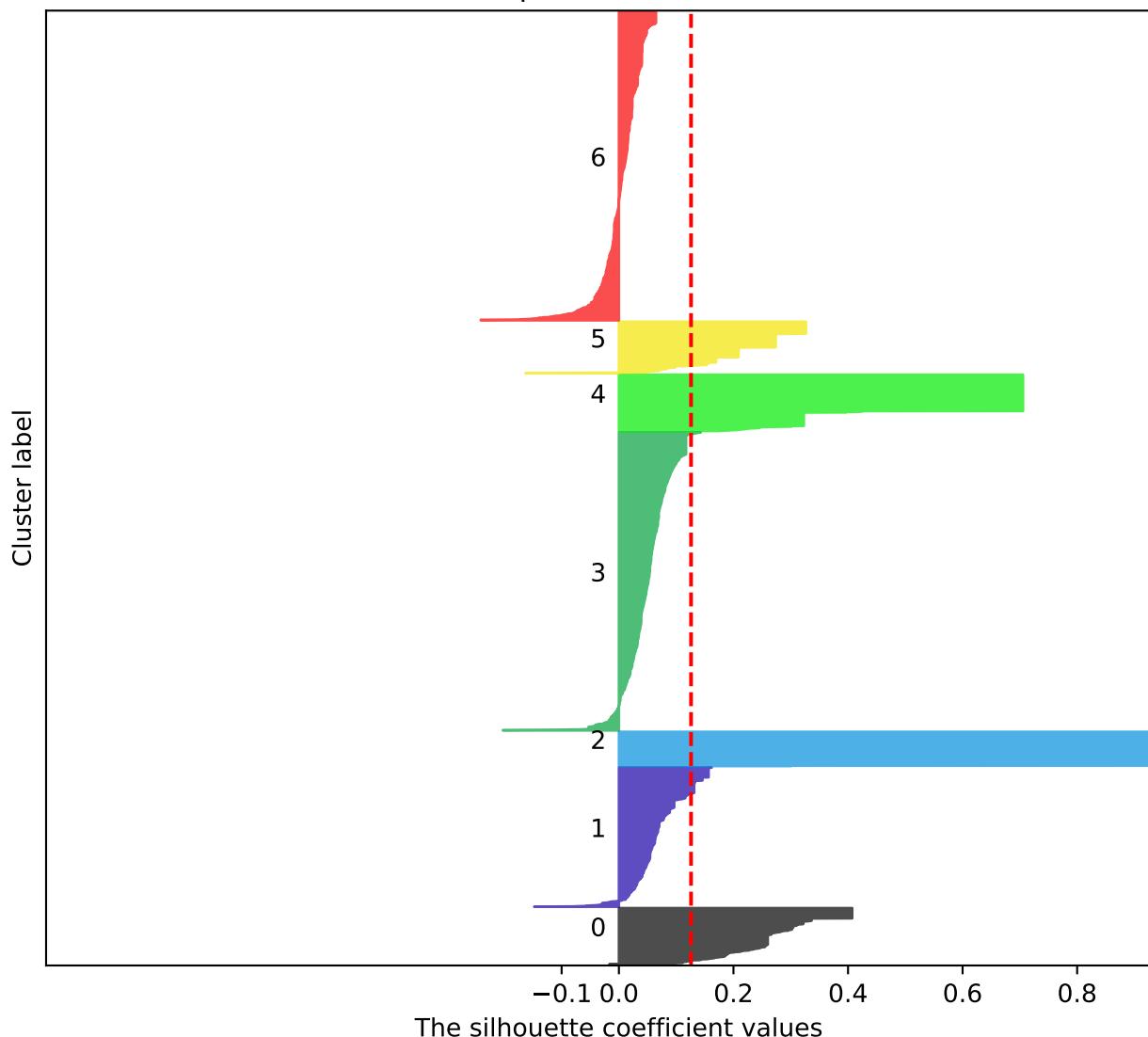


The visualization of the clustered data.

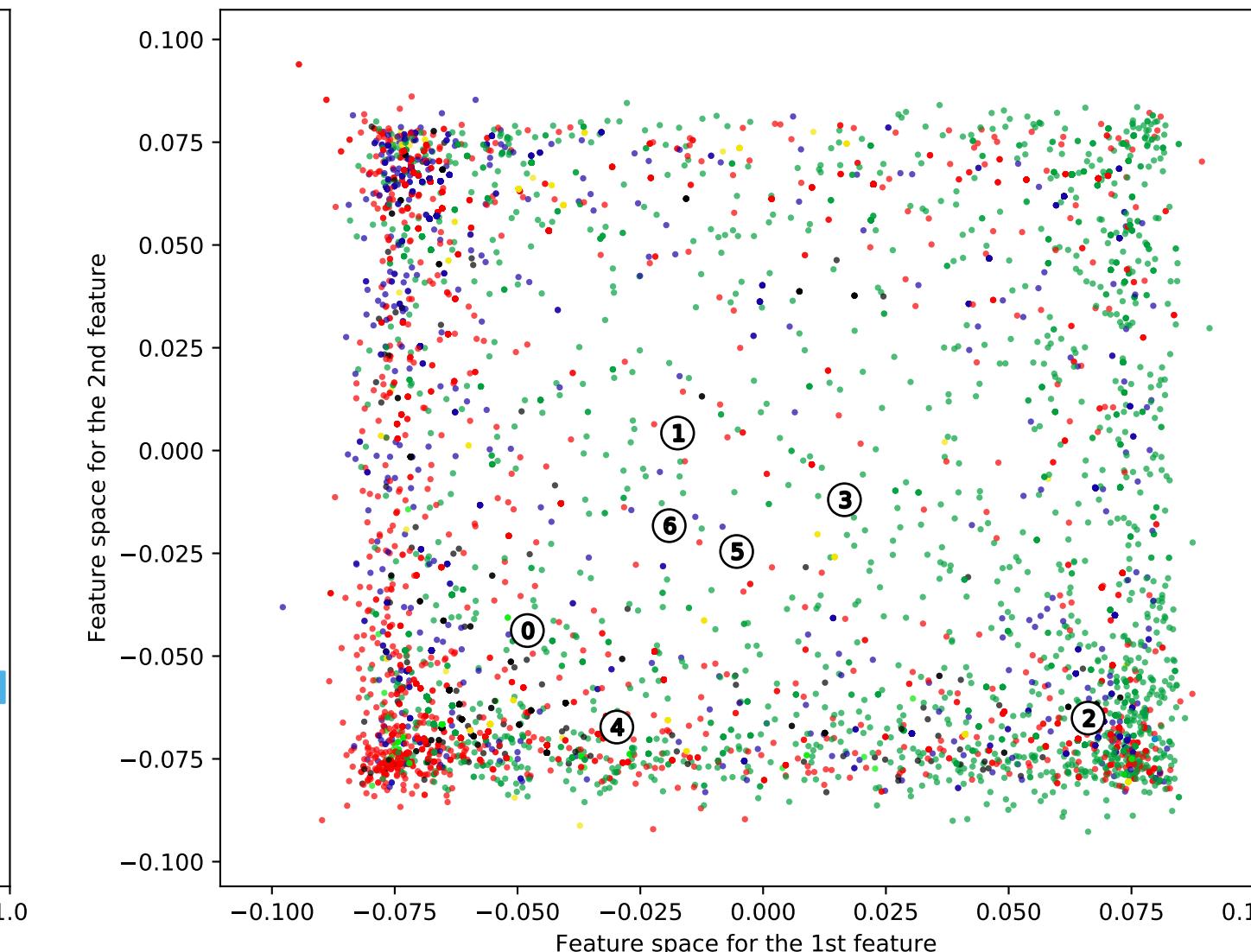


Silhouette analysis for KMeans clustering on sample data with n_clusters = 7 with Average Silhouette of: 0.1259721964597702

The silhouette plot for the various clusters.

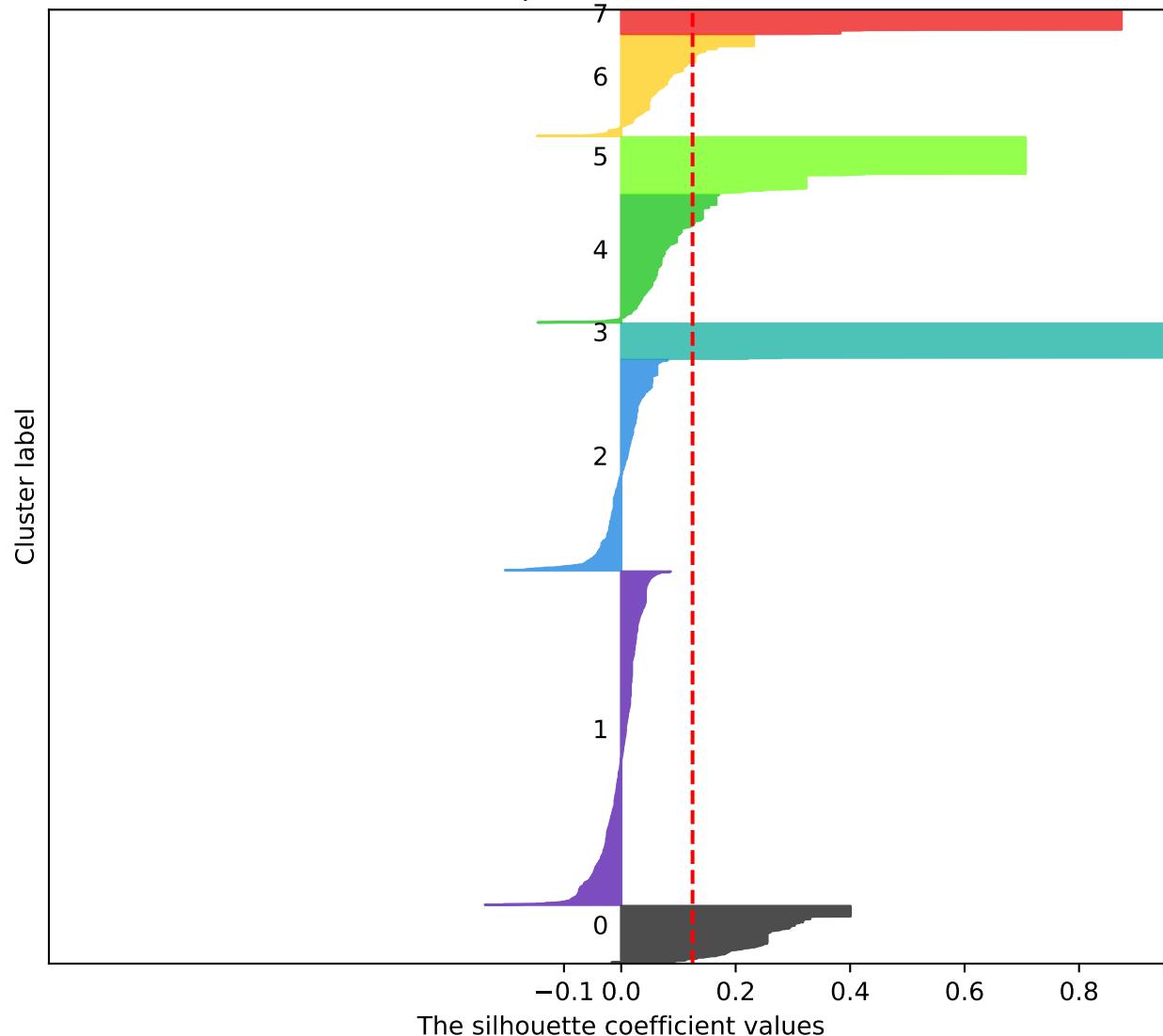


The visualization of the clustered data.

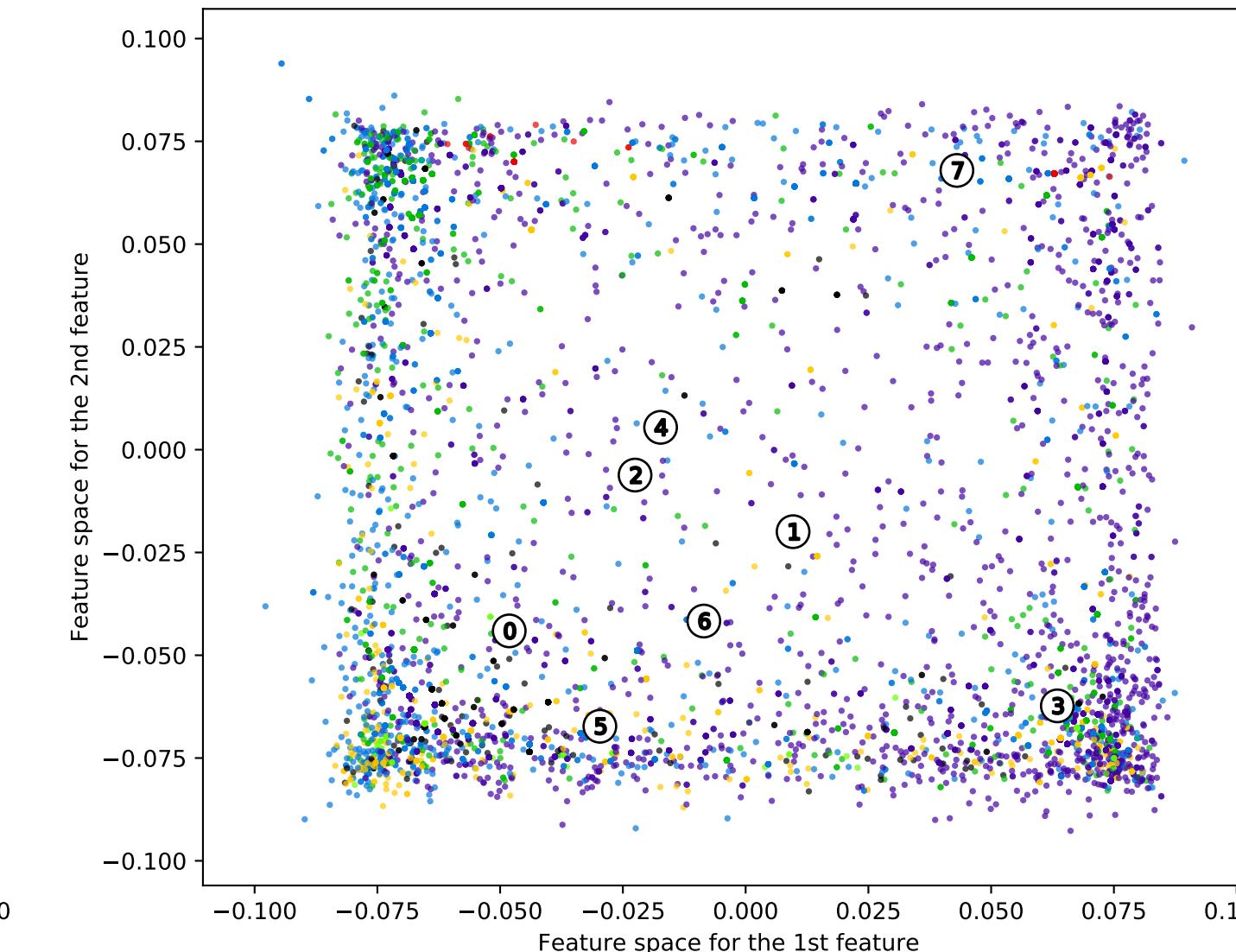


Silhouette analysis for KMeans clustering on sample data with n_clusters = 8 with Average Silhouette of: 0.12468963861465454

The silhouette plot for the various clusters.

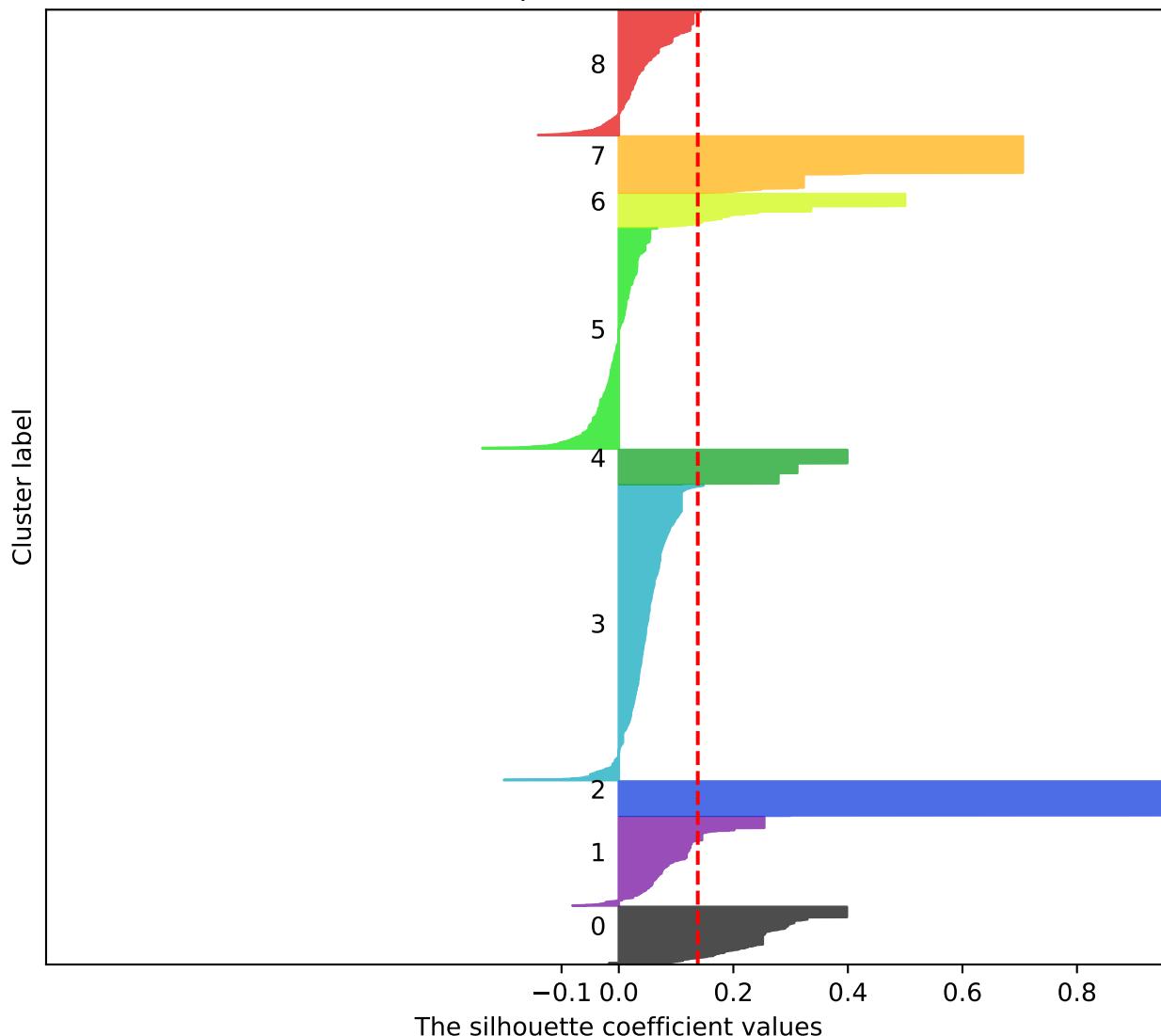


The visualization of the clustered data.

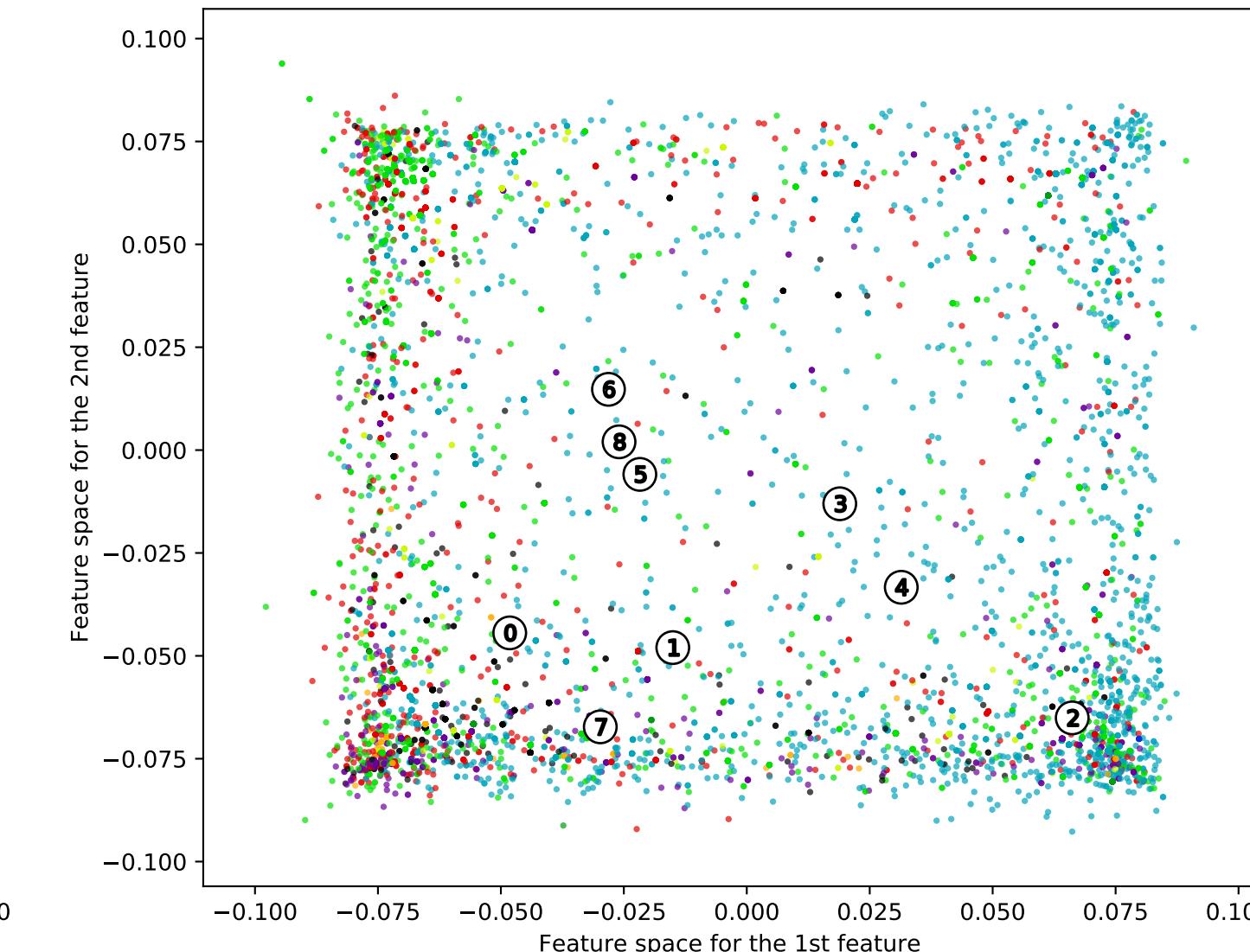


Silhouette analysis for KMeans clustering on sample data with n_clusters = 9 with Average Silhouette of: 0.13788023591041565

The silhouette plot for the various clusters.

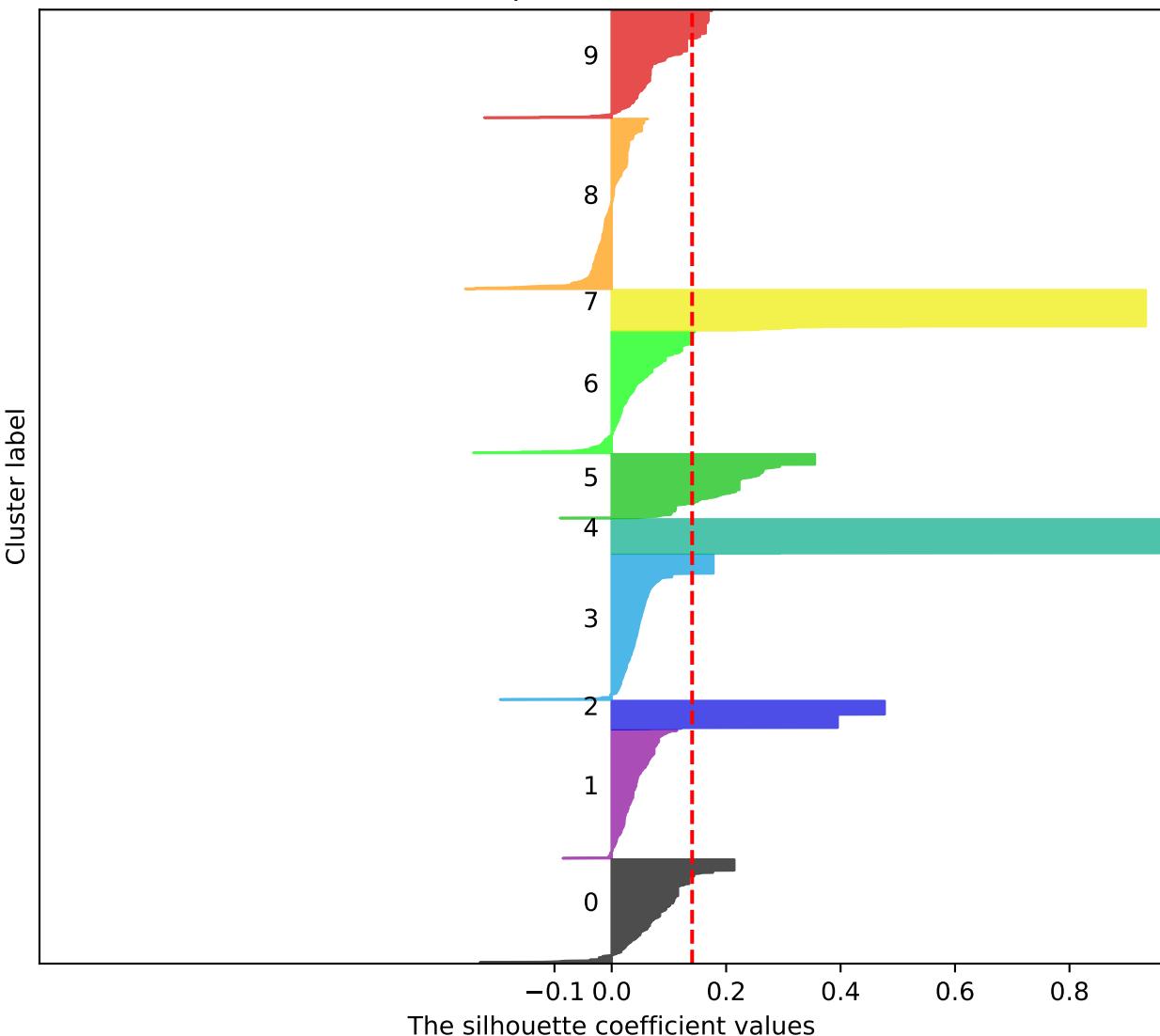


The visualization of the clustered data.

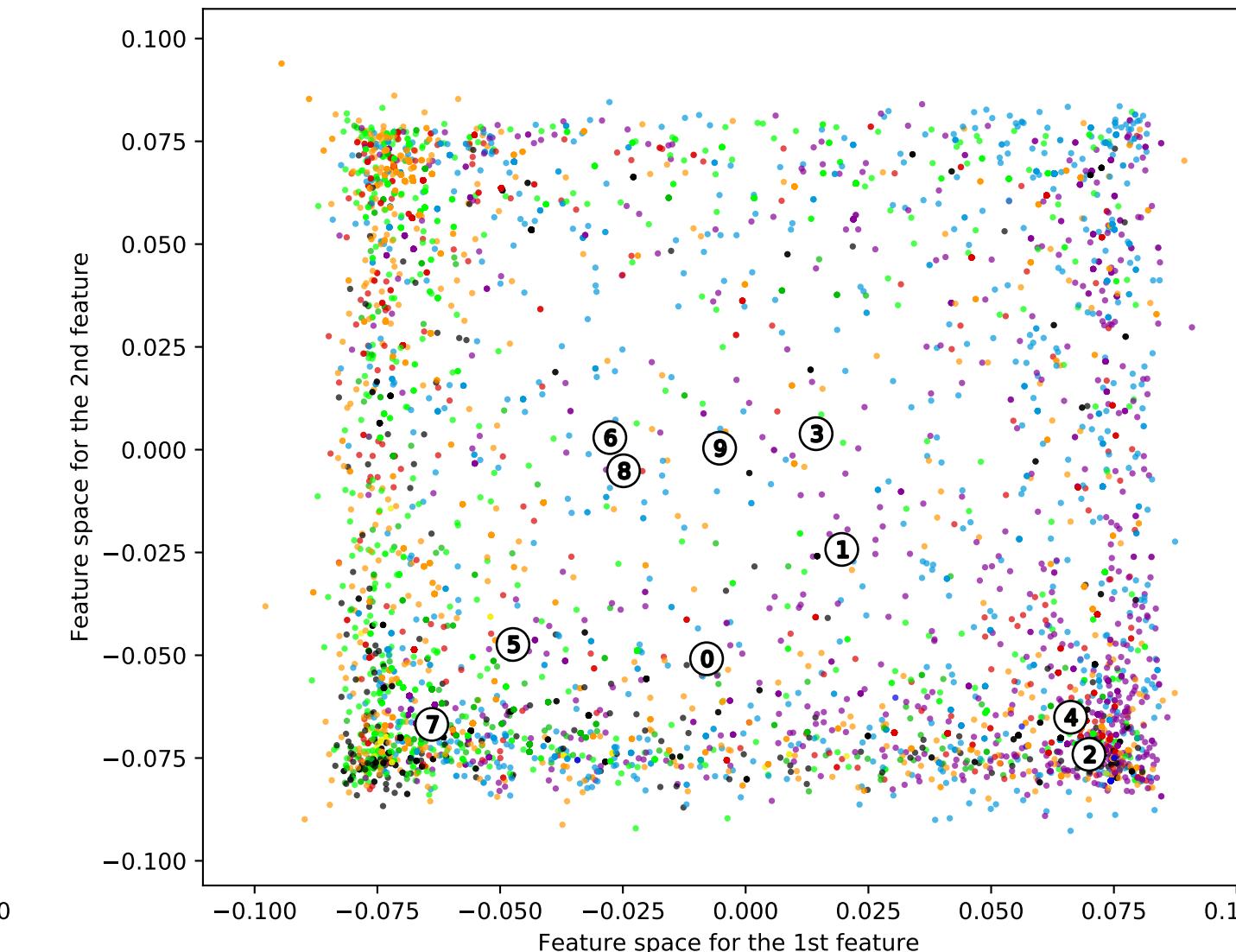


Silhouette analysis for KMeans clustering on sample data with n_clusters = 10 with Average Silhouette of: 0.14056362211704254

The silhouette plot for the various clusters.

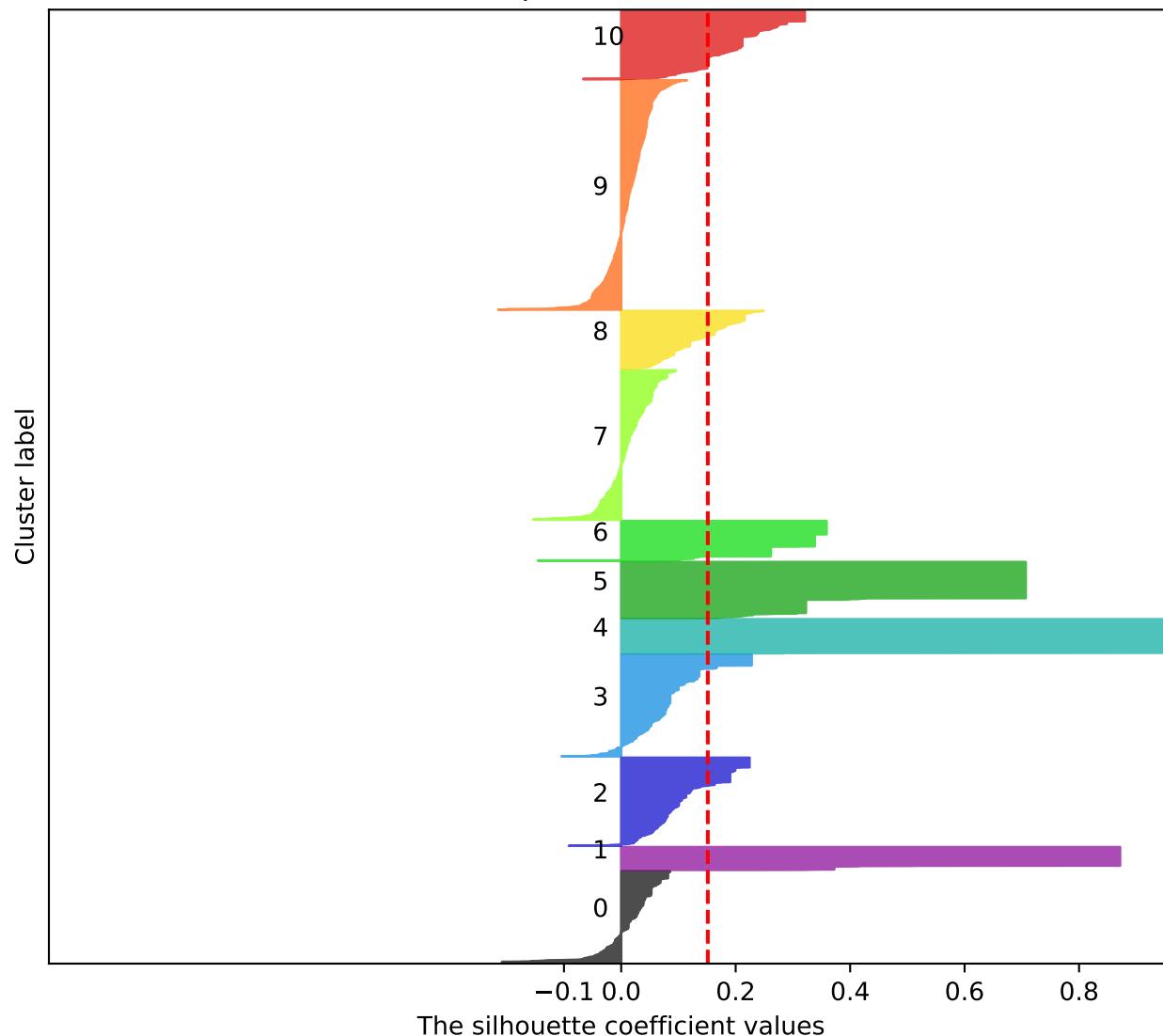


The visualization of the clustered data.

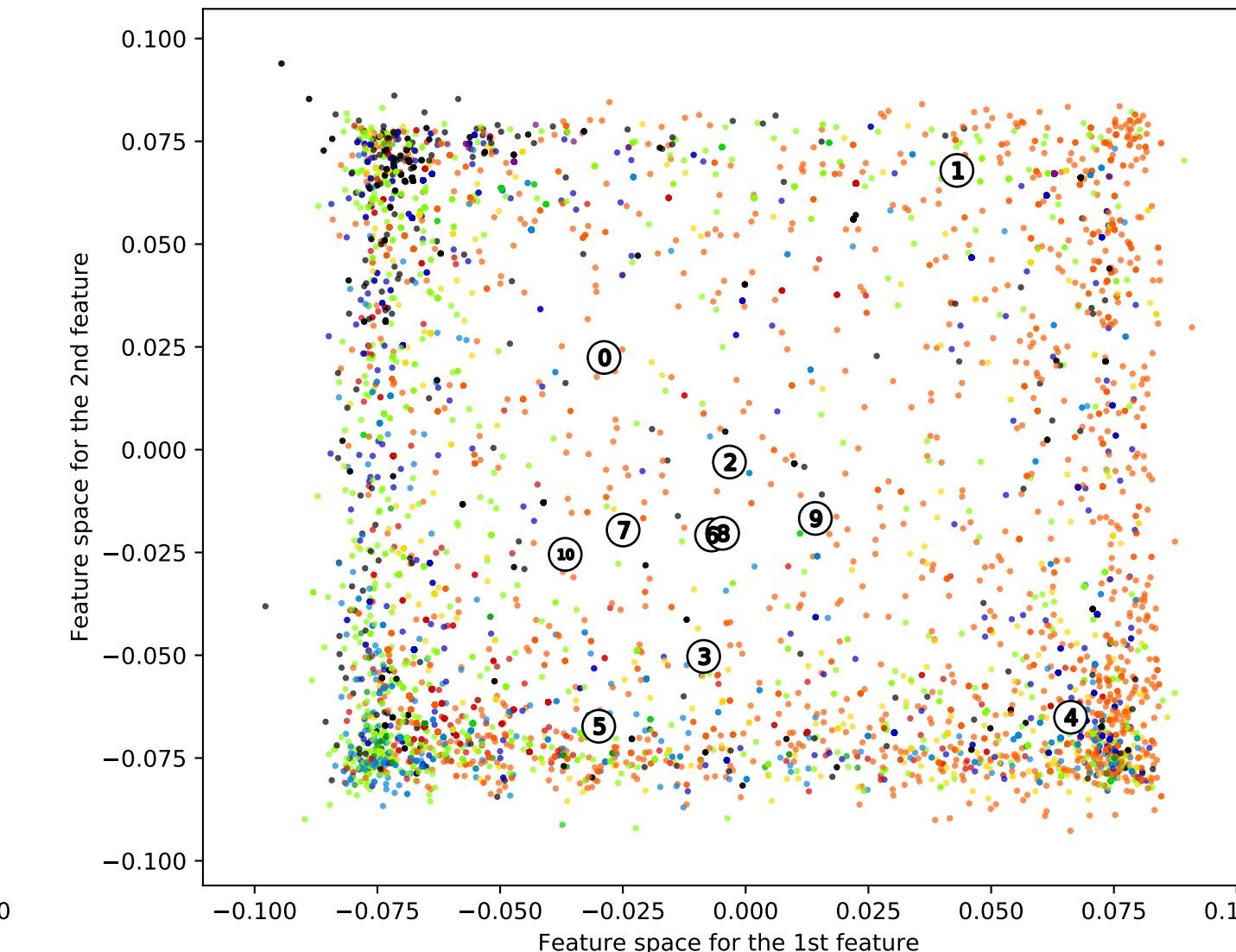


Silhouette analysis for KMeans clustering on sample data with n_clusters = 11 with Average Silhouette of: 0.1513708084821701

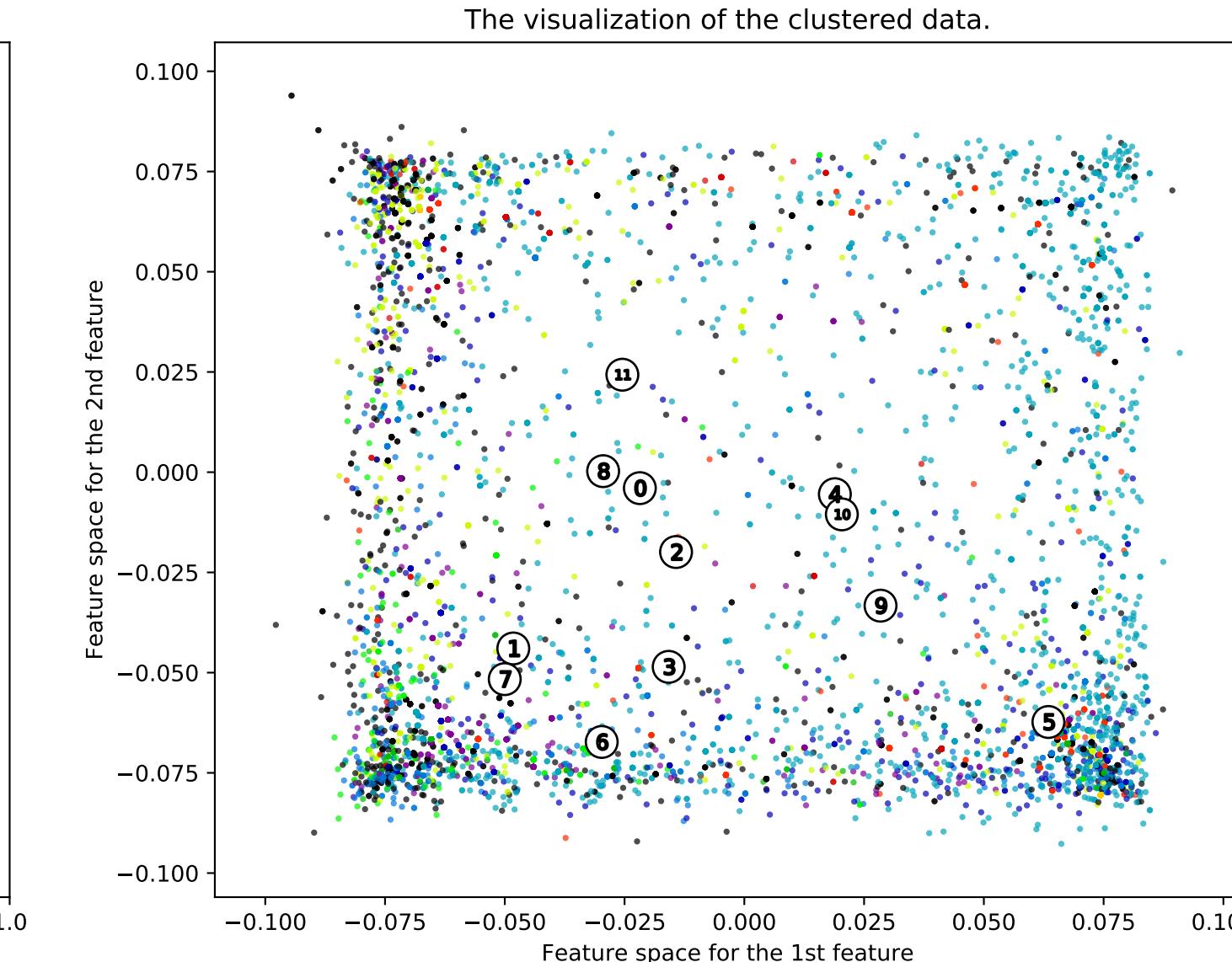
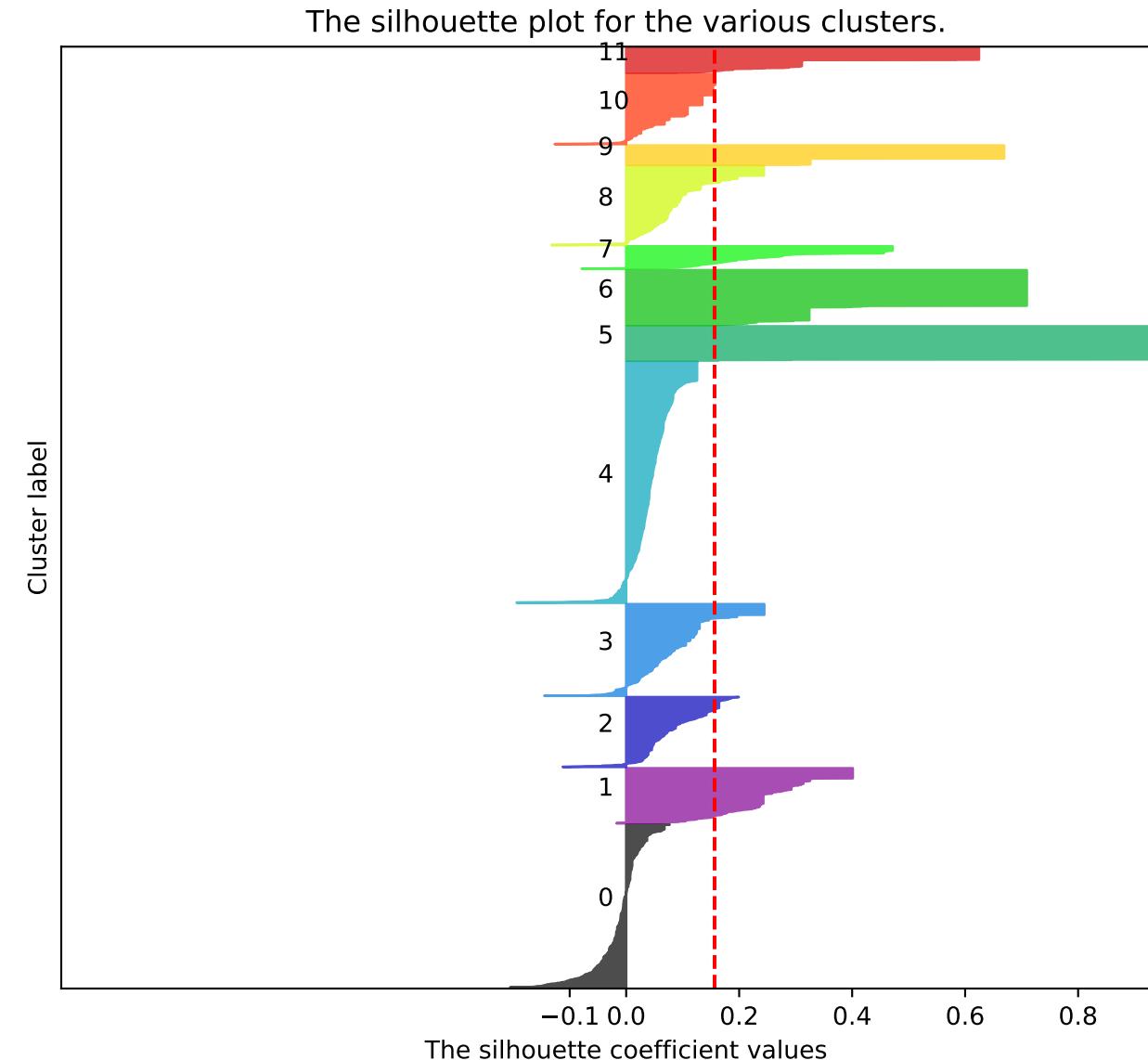
The silhouette plot for the various clusters.



The visualization of the clustered data.

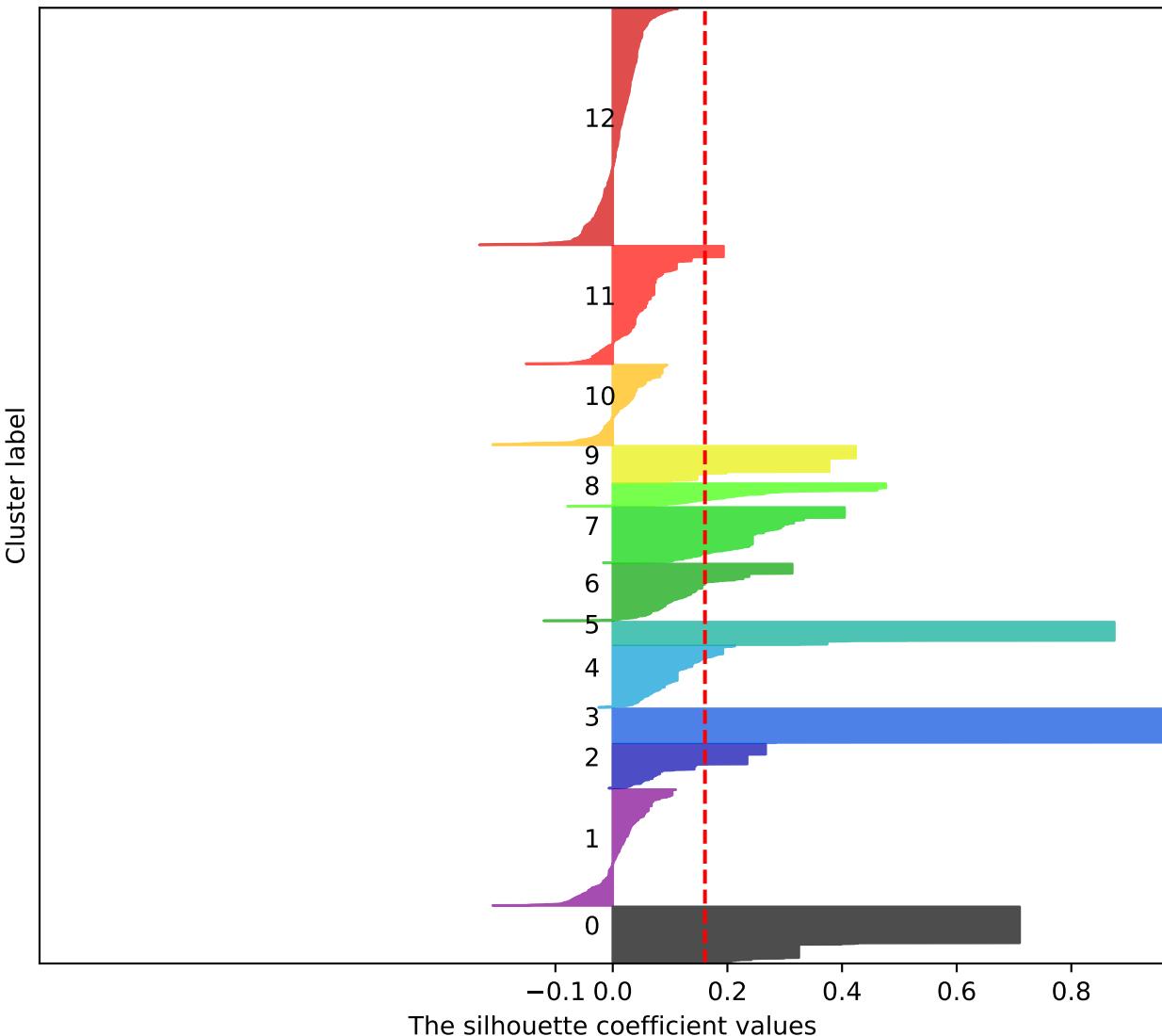


Silhouette analysis for KMeans clustering on sample data with n_clusters = 12 with Average Silhouette of: 0.15646806359291077

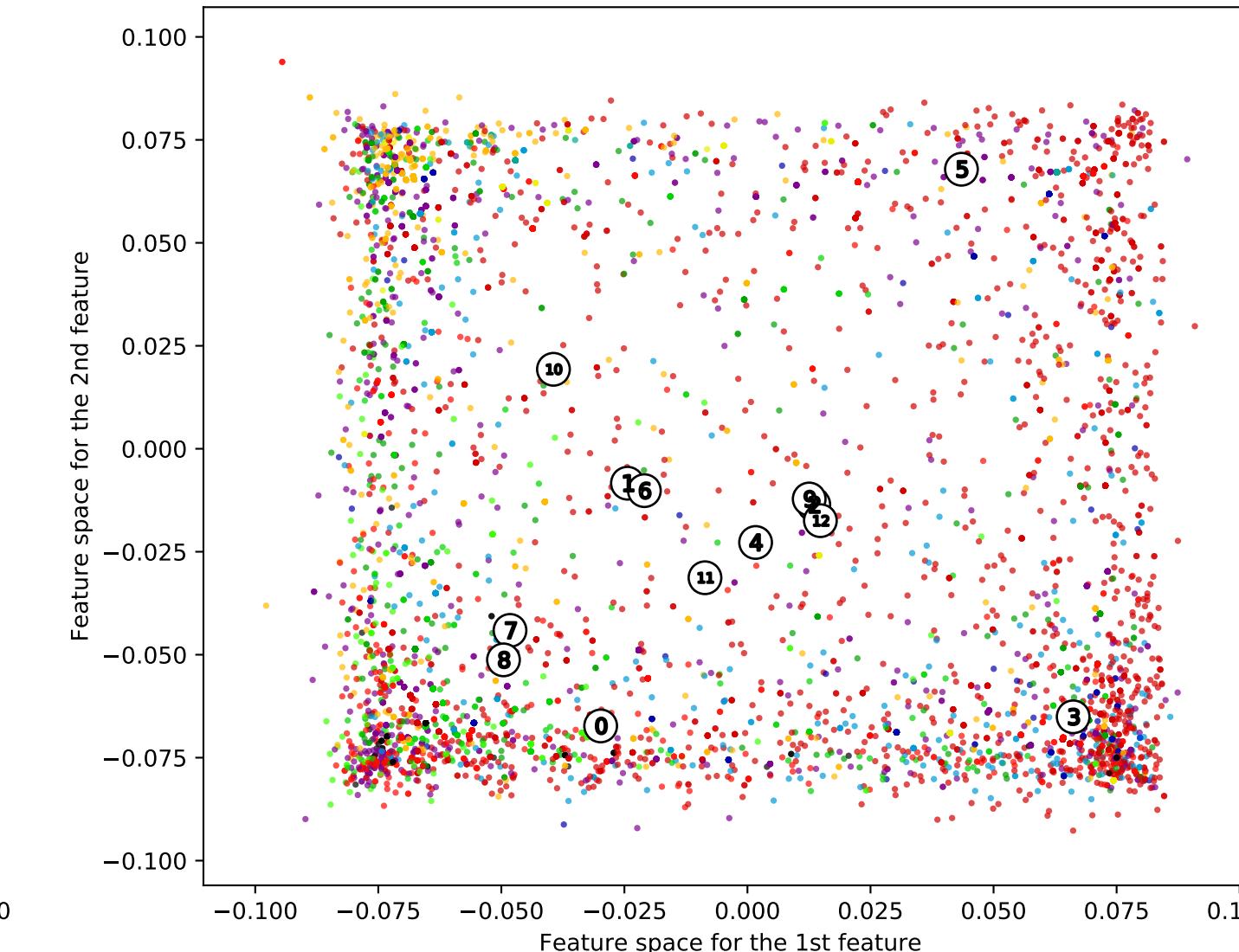


Silhouette analysis for KMeans clustering on sample data with n_clusters = 13 with Average Silhouette of: 0.16089926660060883

The silhouette plot for the various clusters.

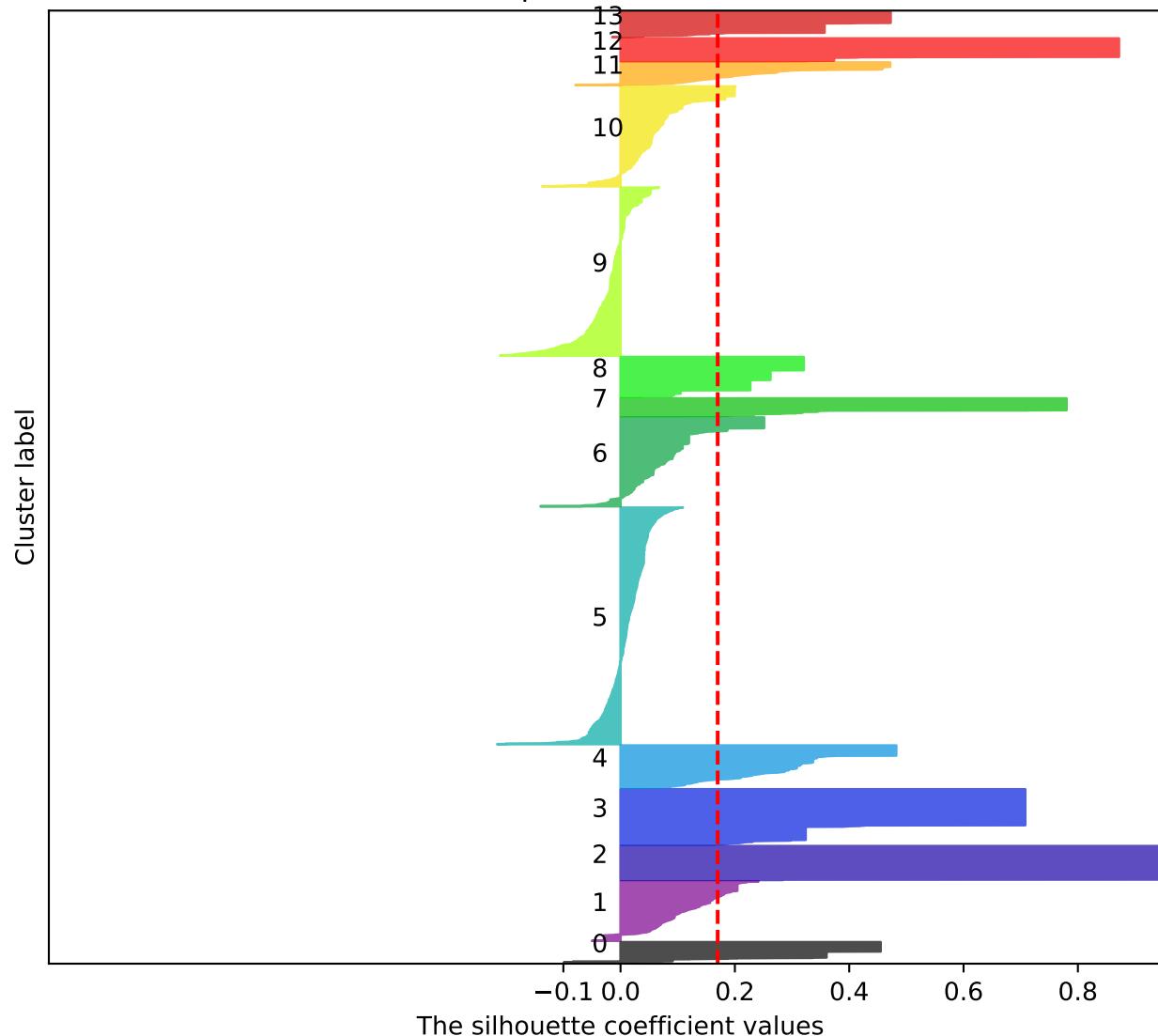


The visualization of the clustered data.

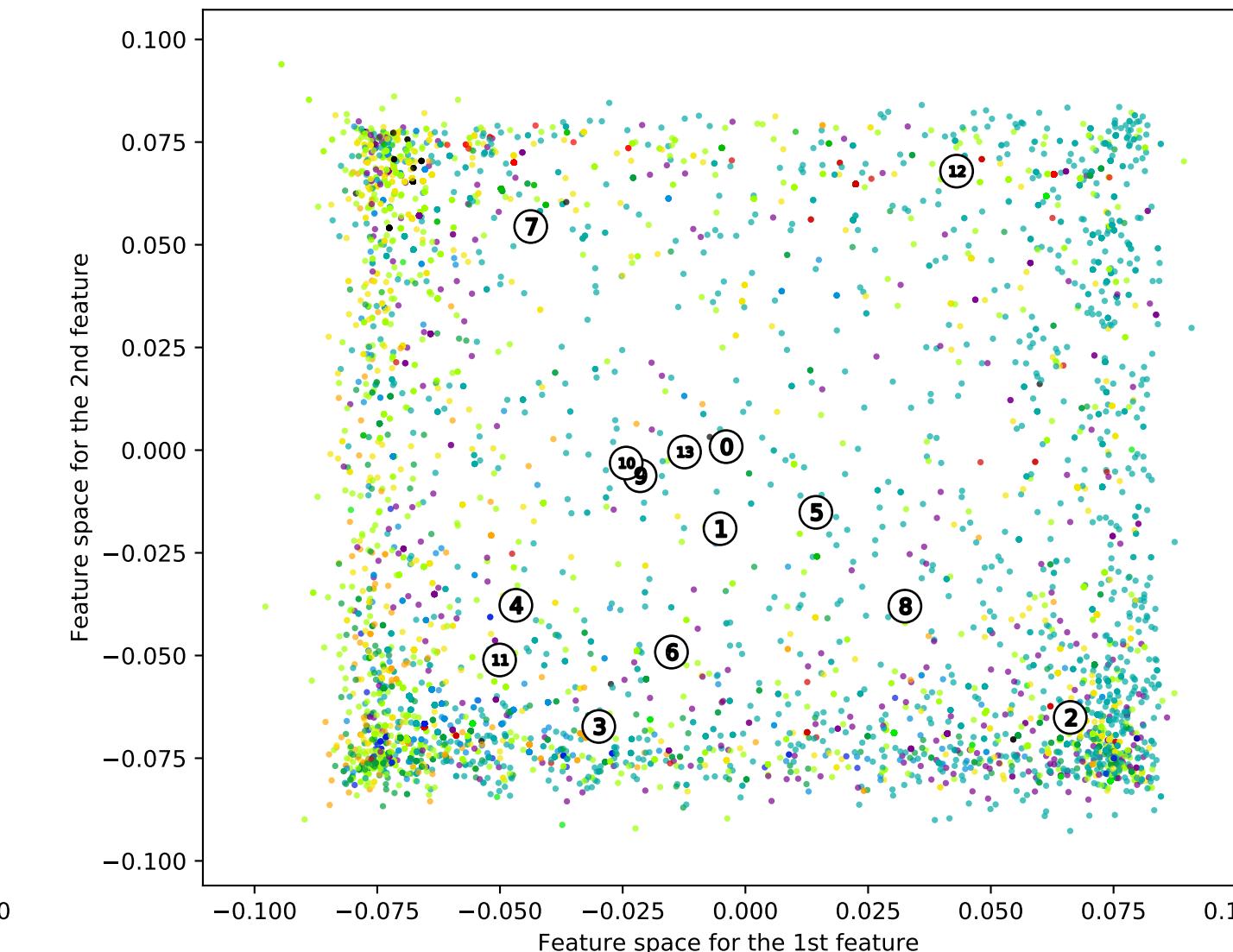


Silhouette analysis for KMeans clustering on sample data with n_clusters = 14 with Average Silhouette of: 0.1699480265378952

The silhouette plot for the various clusters.

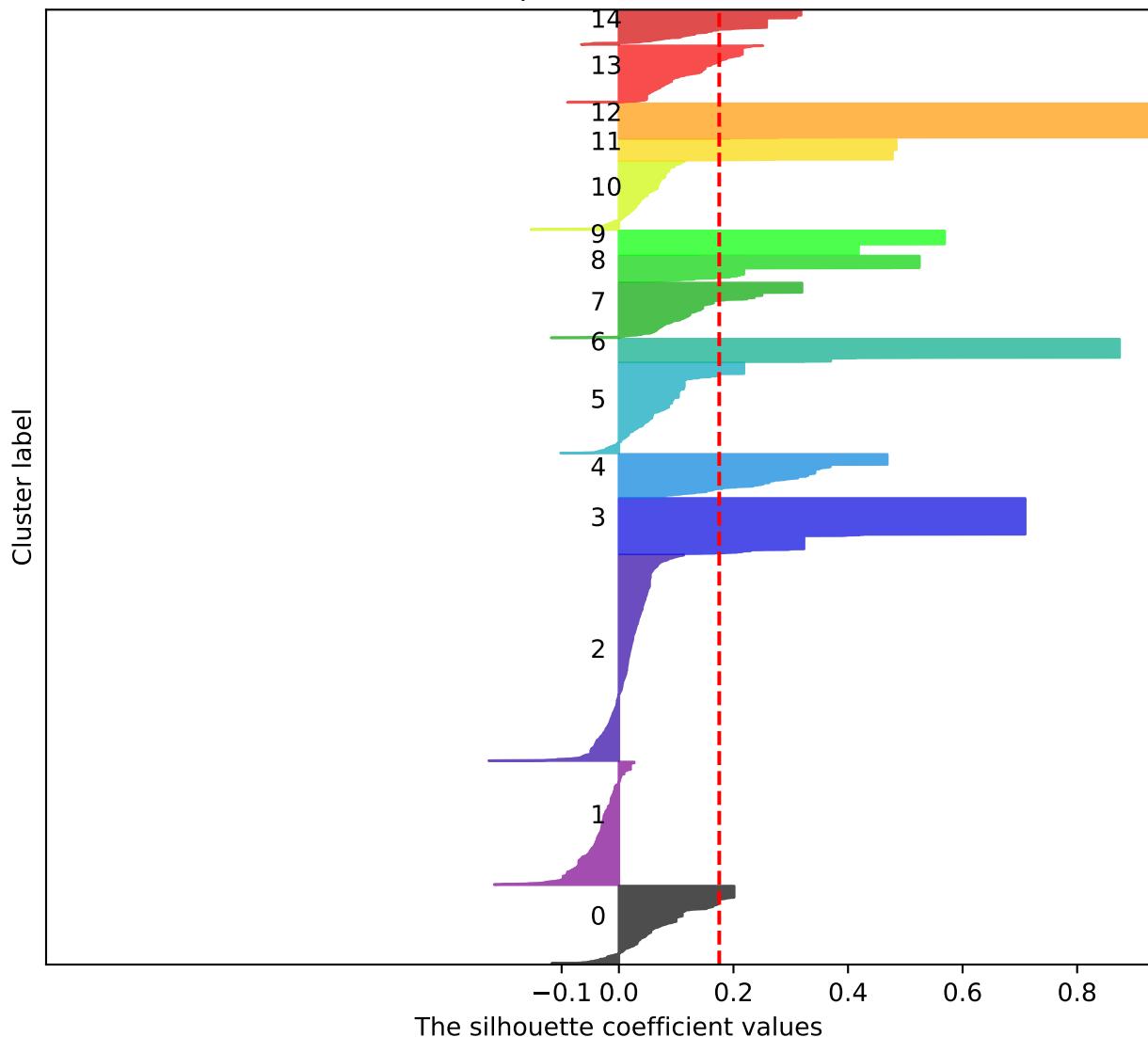


The visualization of the clustered data.

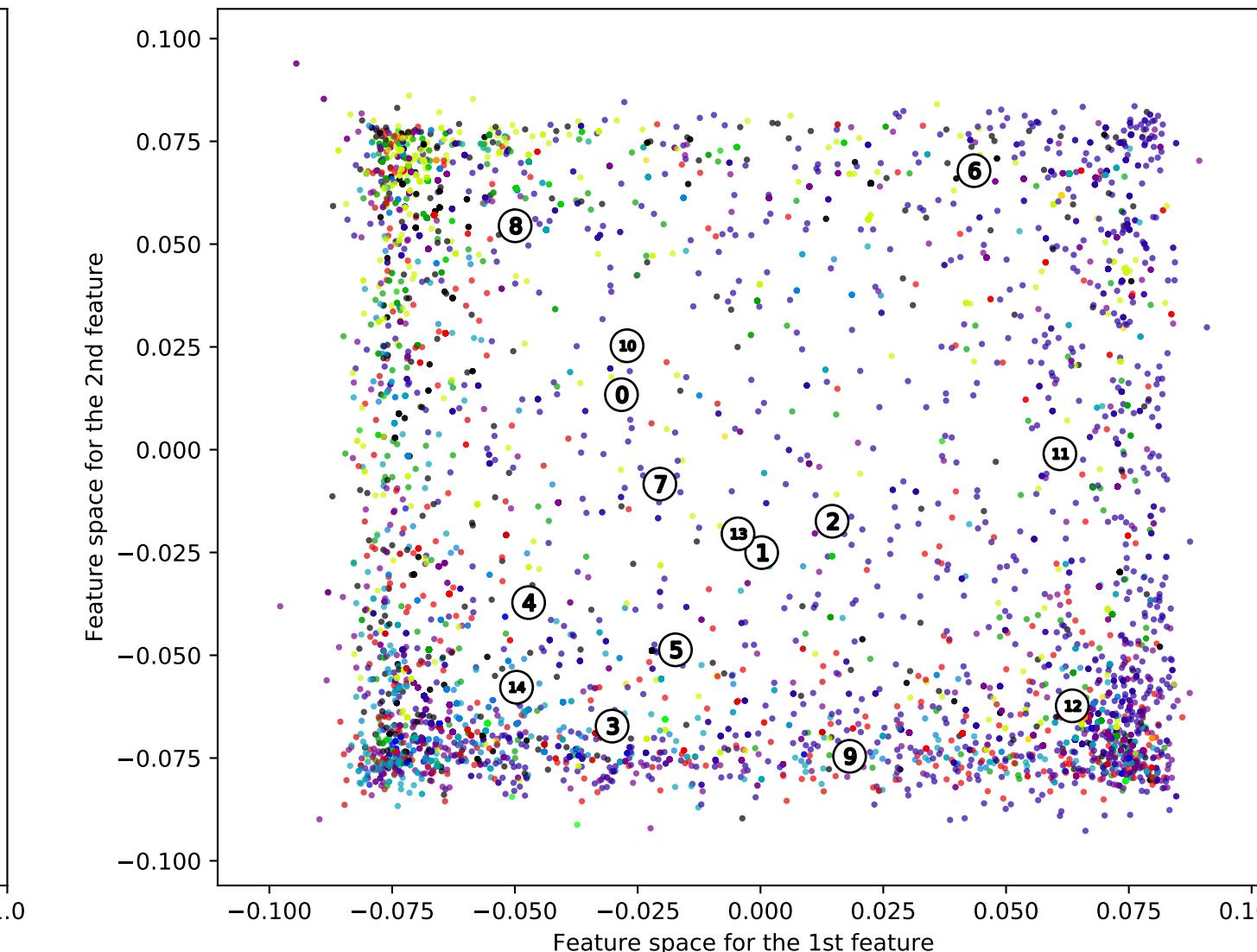


Silhouette analysis for KMeans clustering on sample data with n_clusters = 15 with Average Silhouette of: 0.17520317435264587

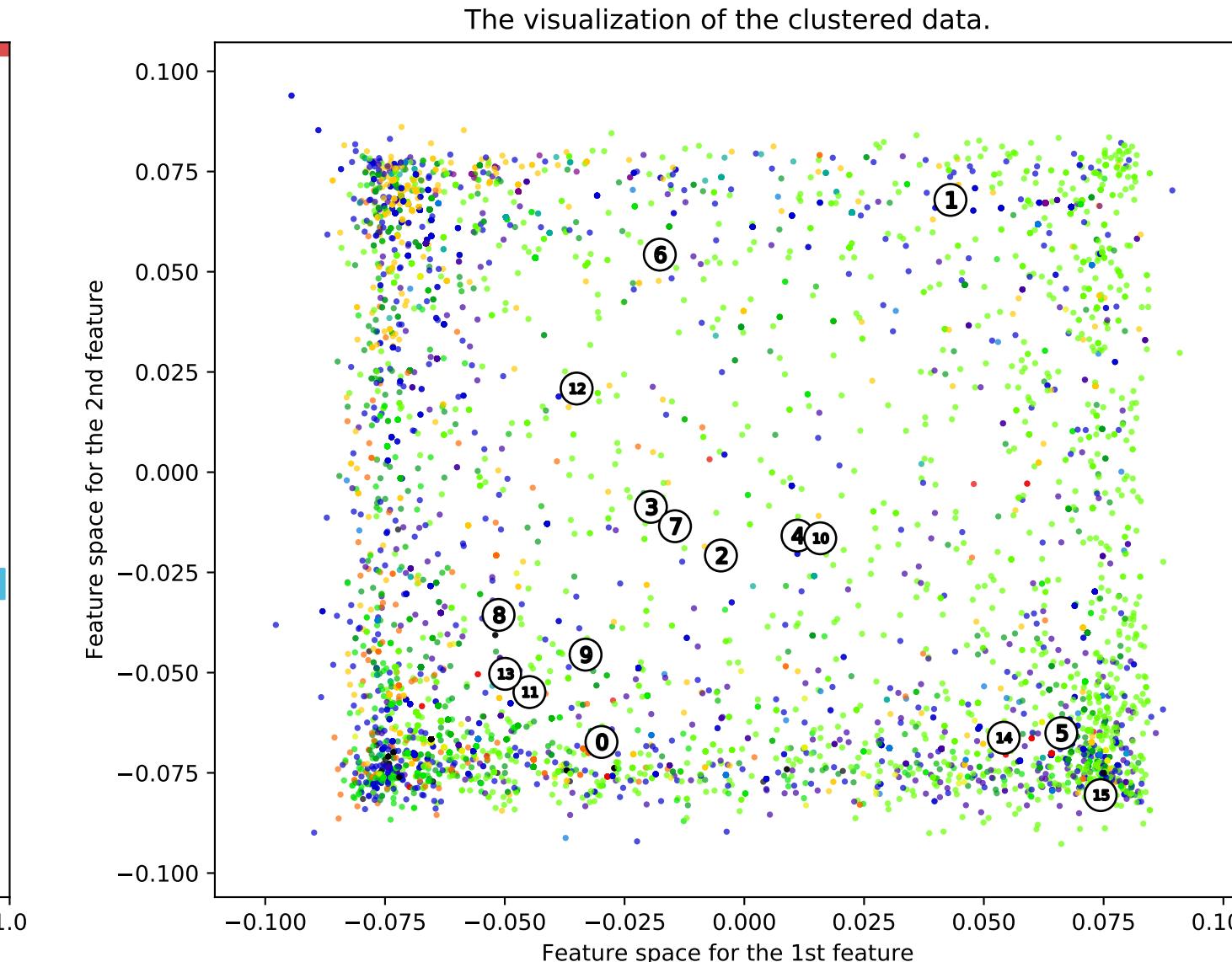
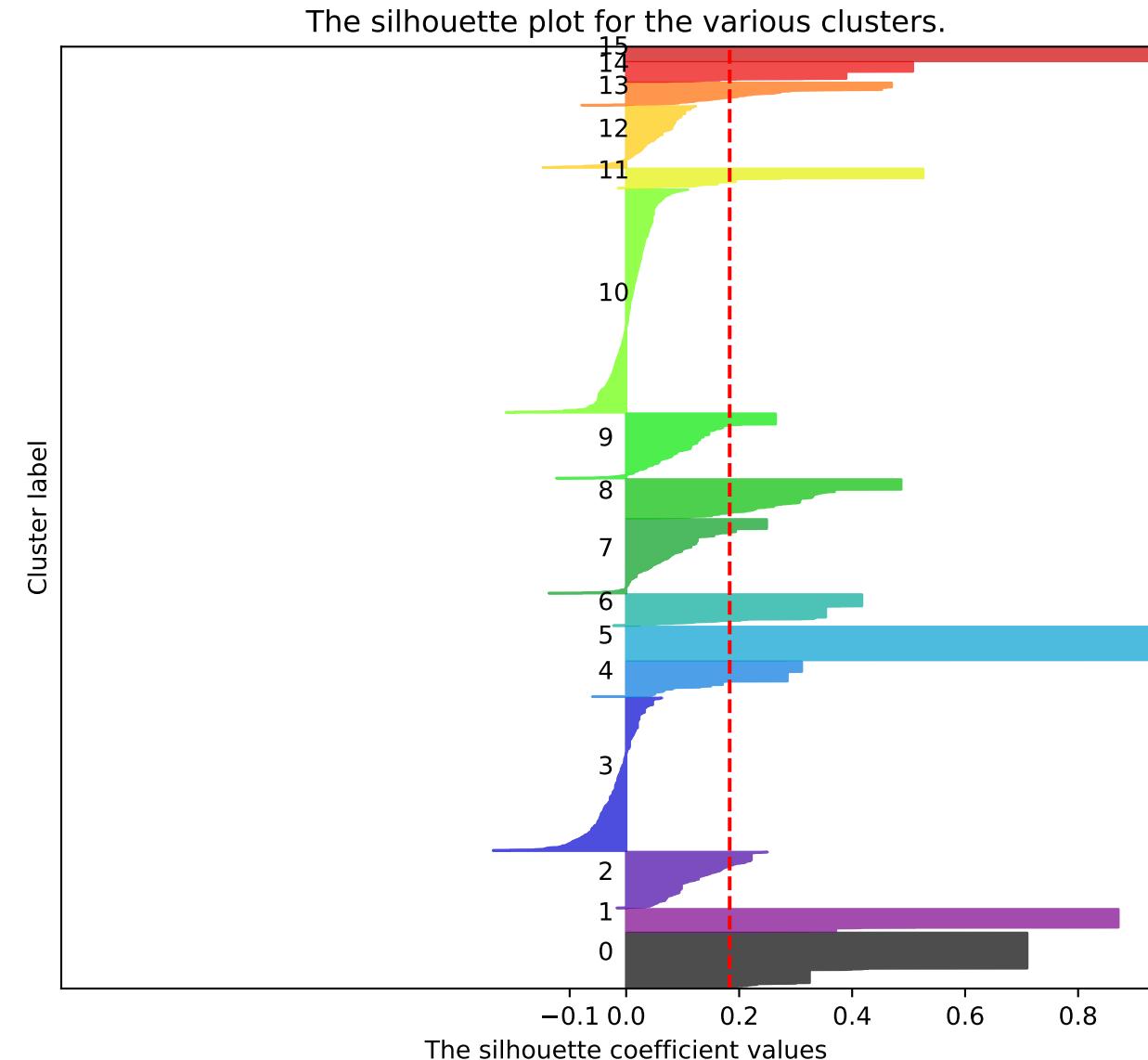
The silhouette plot for the various clusters.



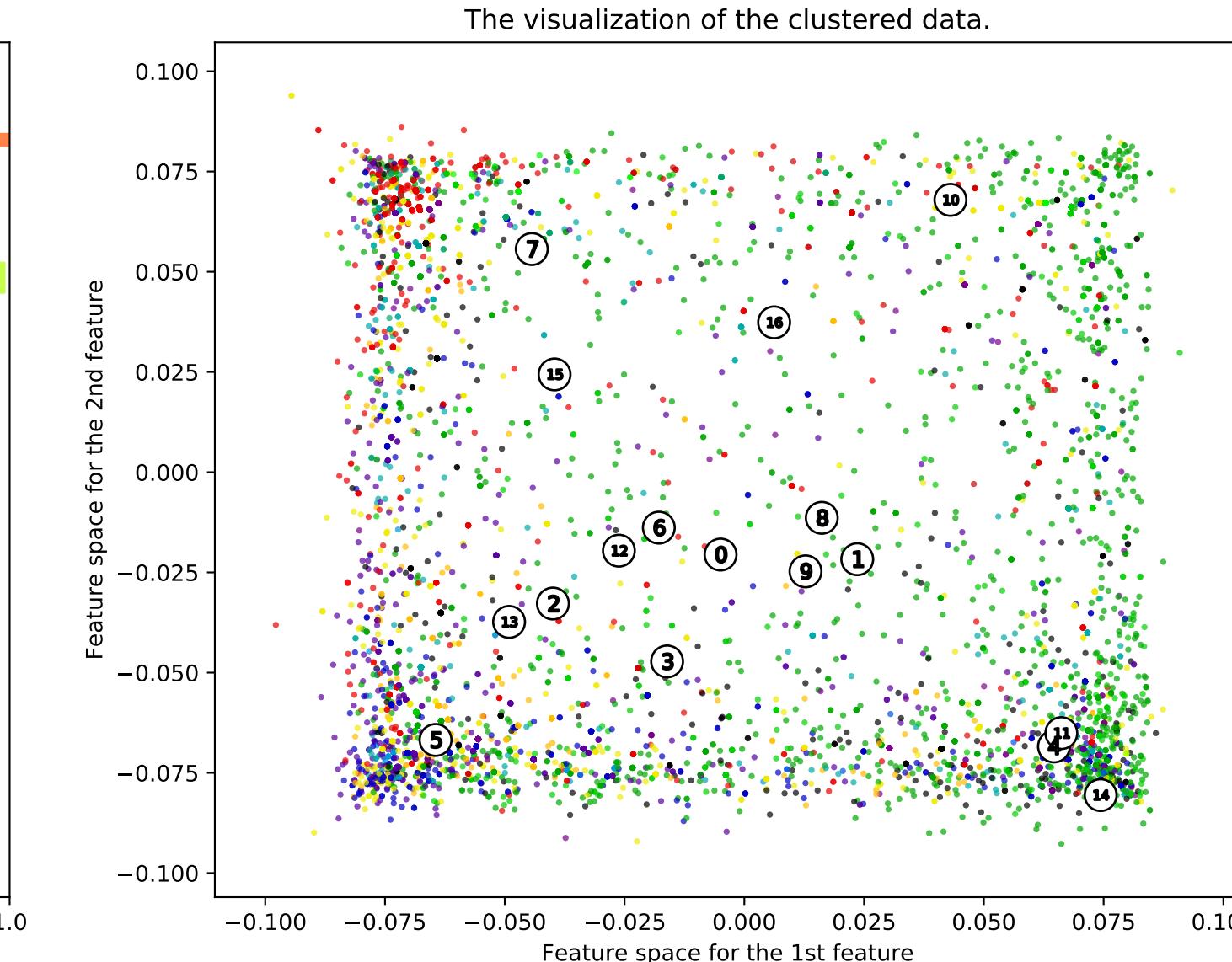
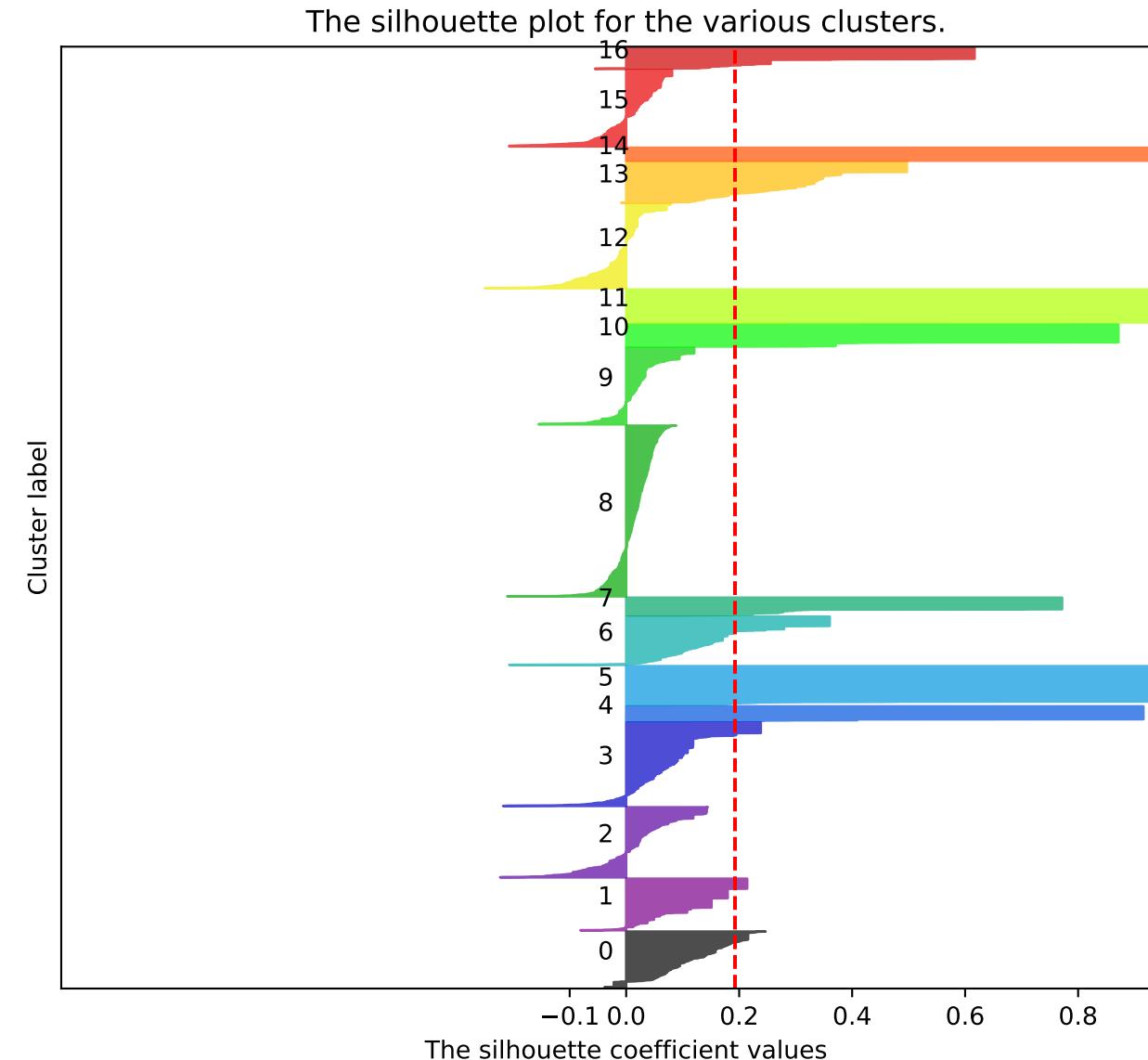
The visualization of the clustered data.



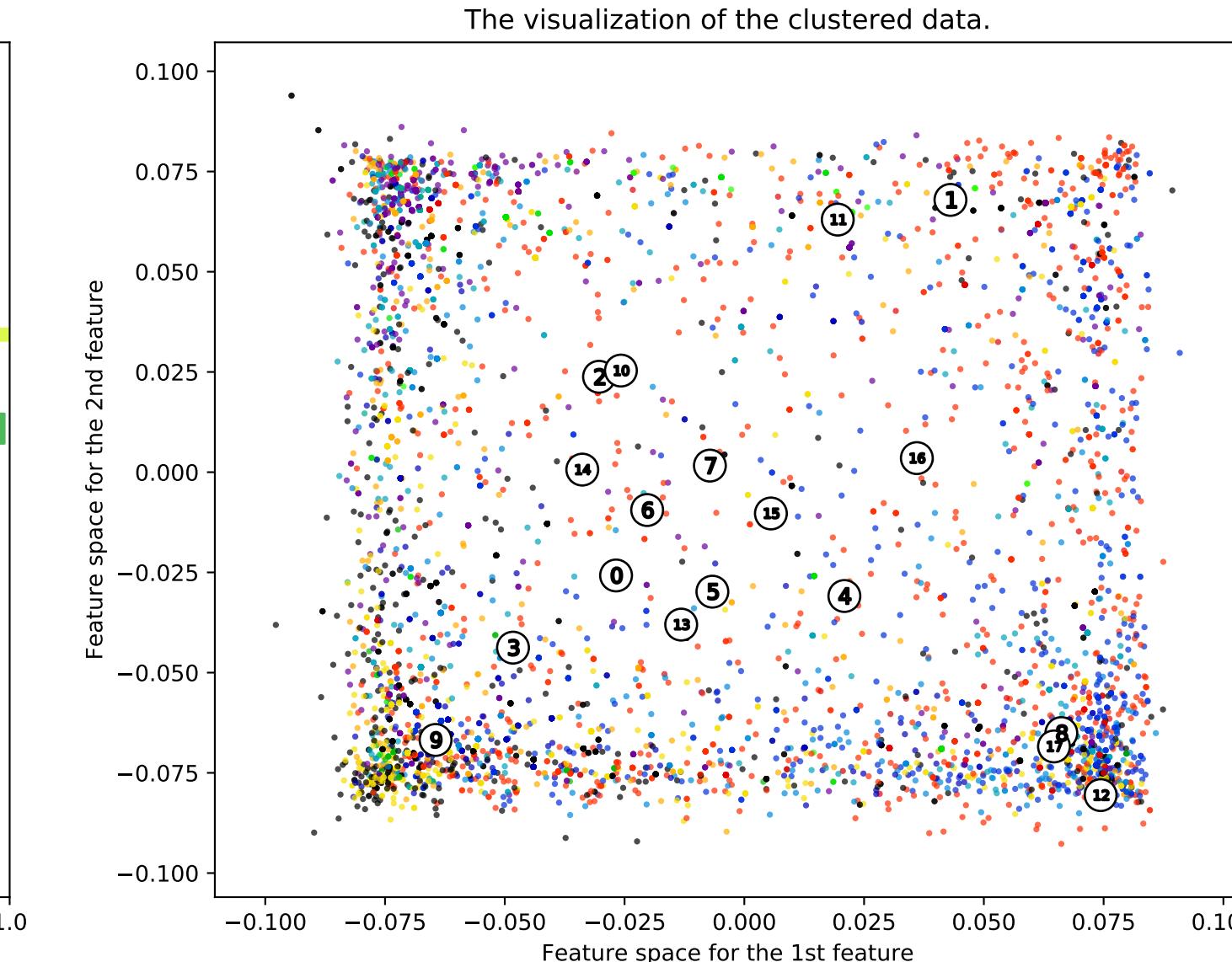
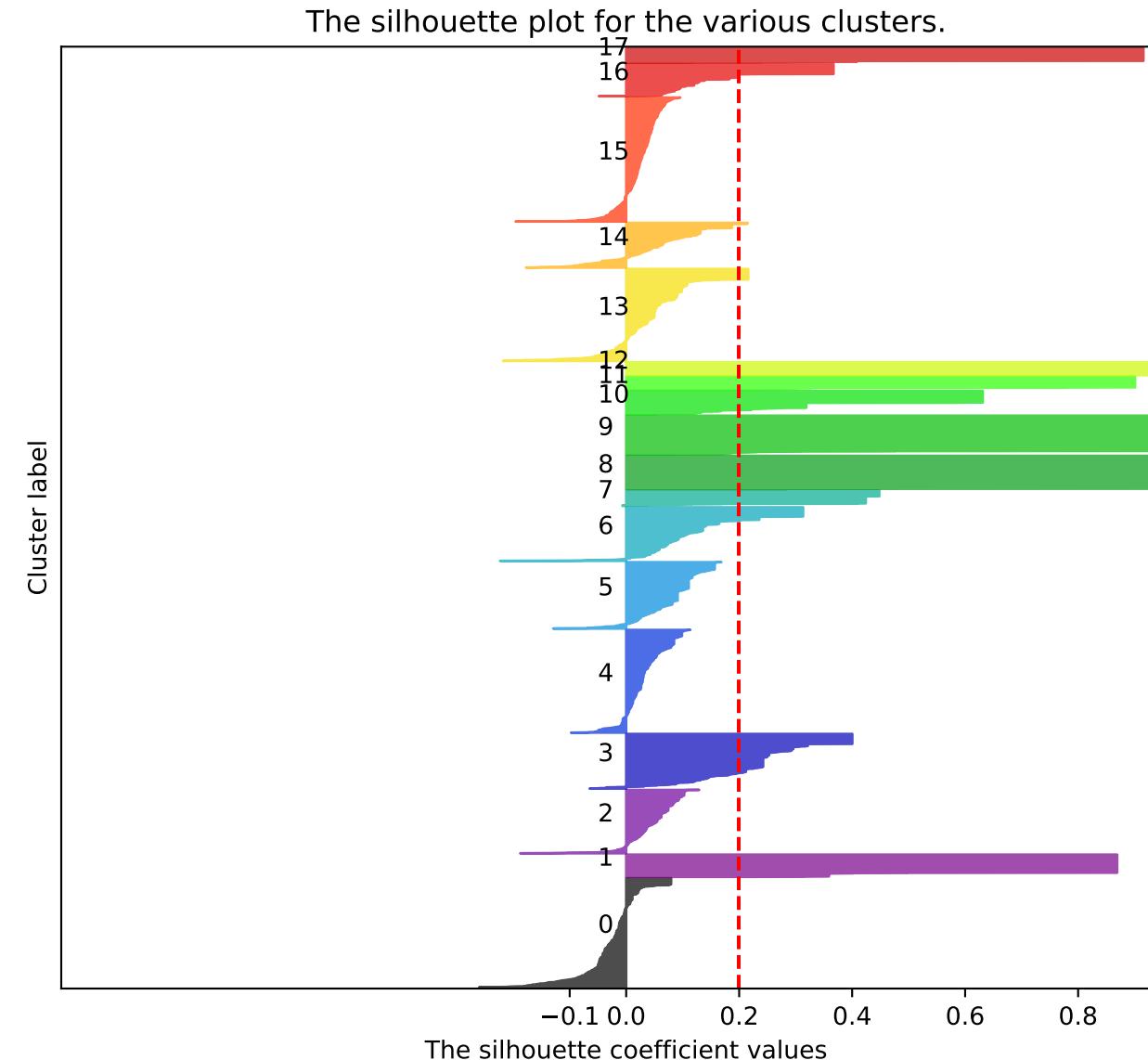
Silhouette analysis for KMeans clustering on sample data with n_clusters = 16 with Average Silhouette of: 0.18325097858905792



Silhouette analysis for KMeans clustering on sample data with n_clusters = 17 with Average Silhouette of: 0.19262994825839996

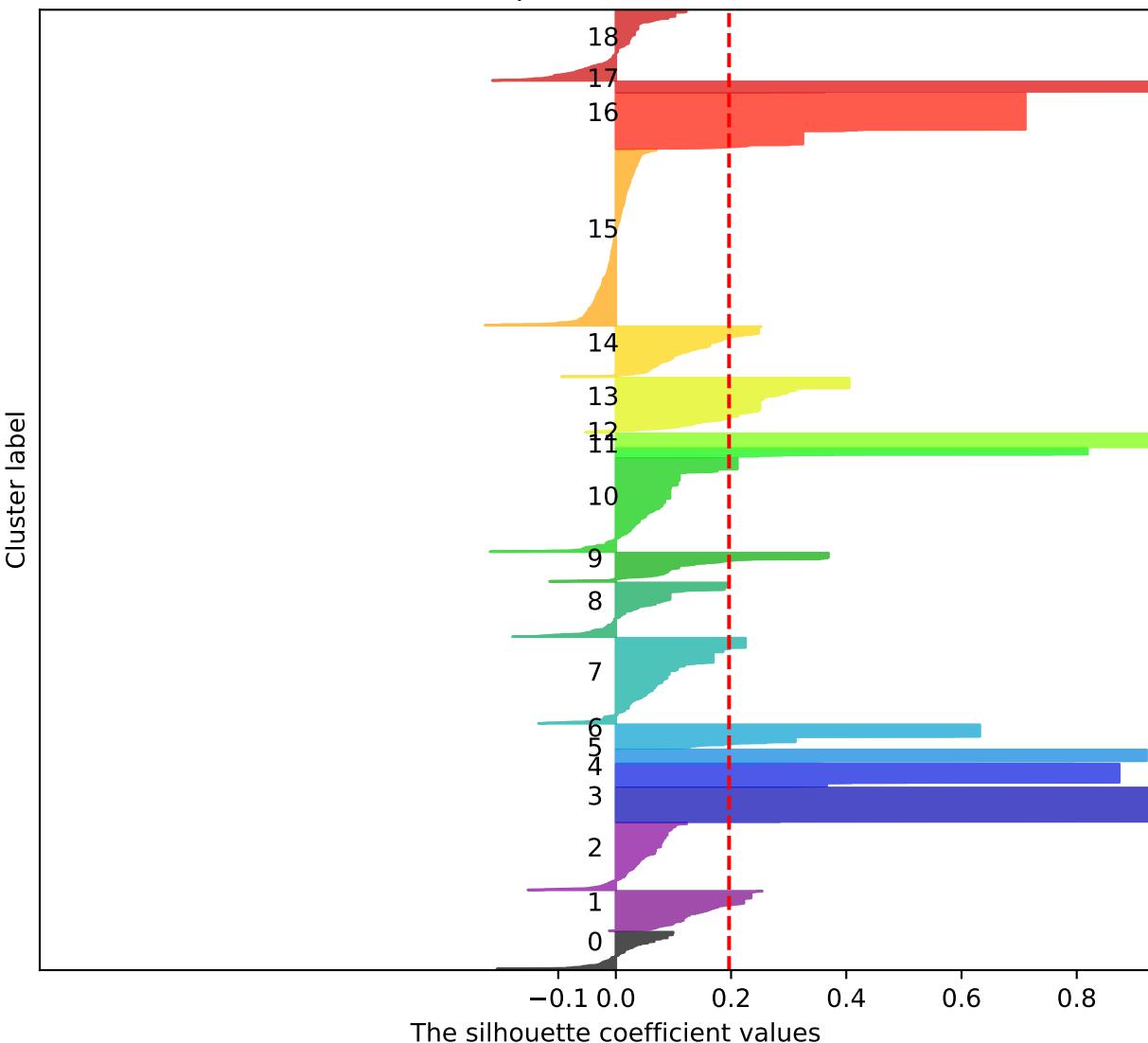


Silhouette analysis for KMeans clustering on sample data with n_clusters = 18 with Average Silhouette of: 0.19924908876419067

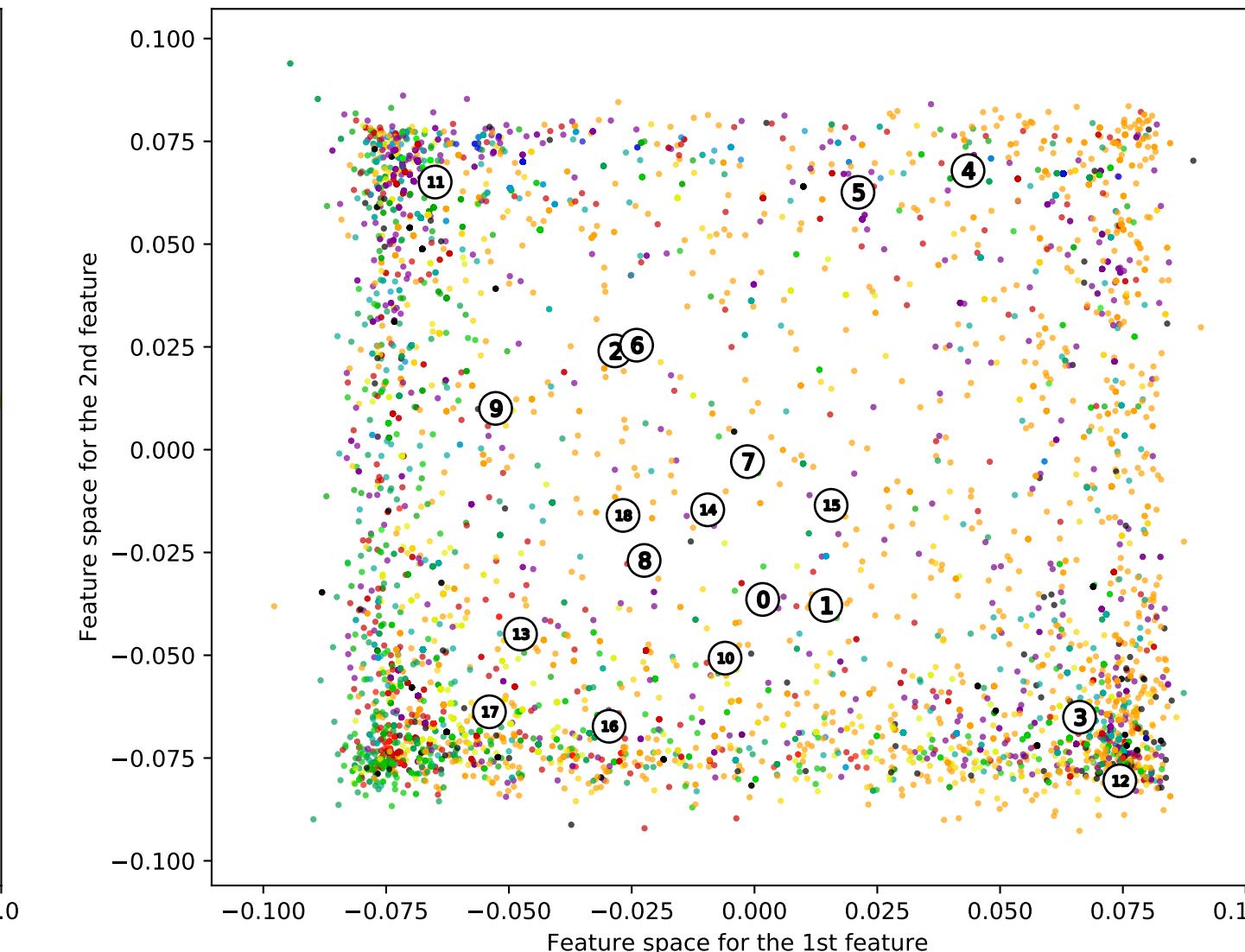


Silhouette analysis for KMeans clustering on sample data with n_clusters = 19 with Average Silhouette of: 0.19653016328811646

The silhouette plot for the various clusters.

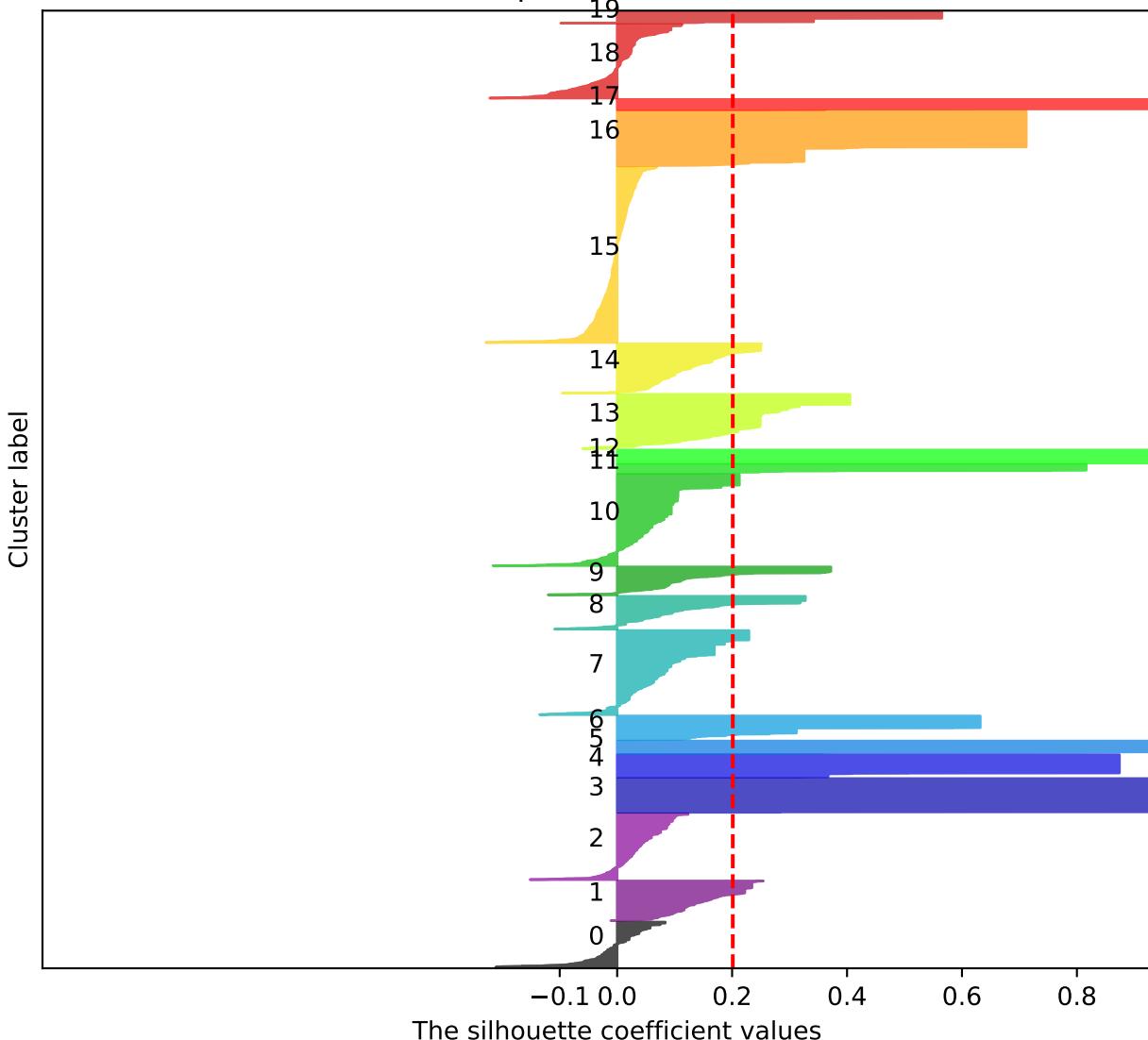


The visualization of the clustered data.

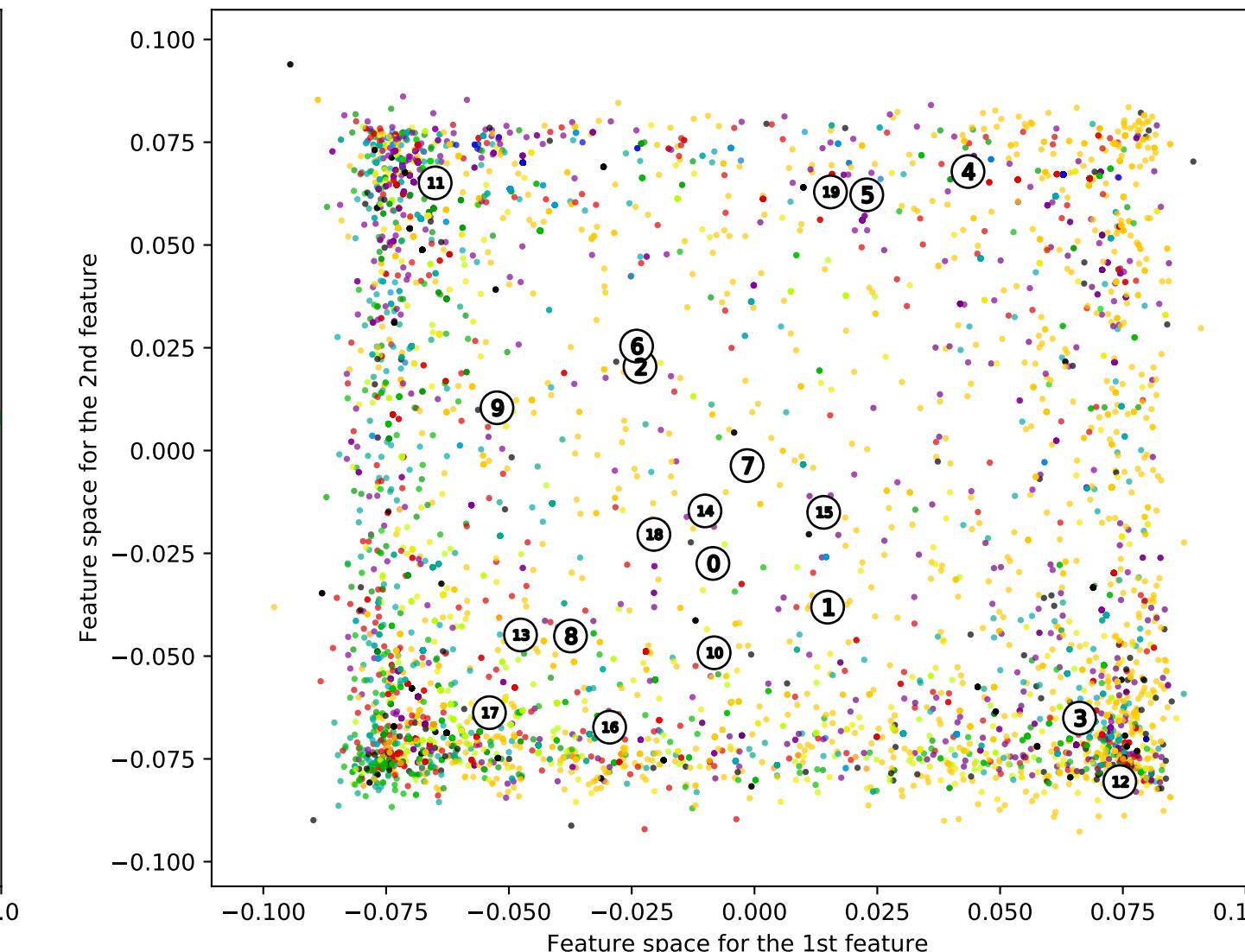


Silhouette analysis for KMeans clustering on sample data with n_clusters = 20 with Average Silhouette of: 0.2011701762676239

The silhouette plot for the various clusters.

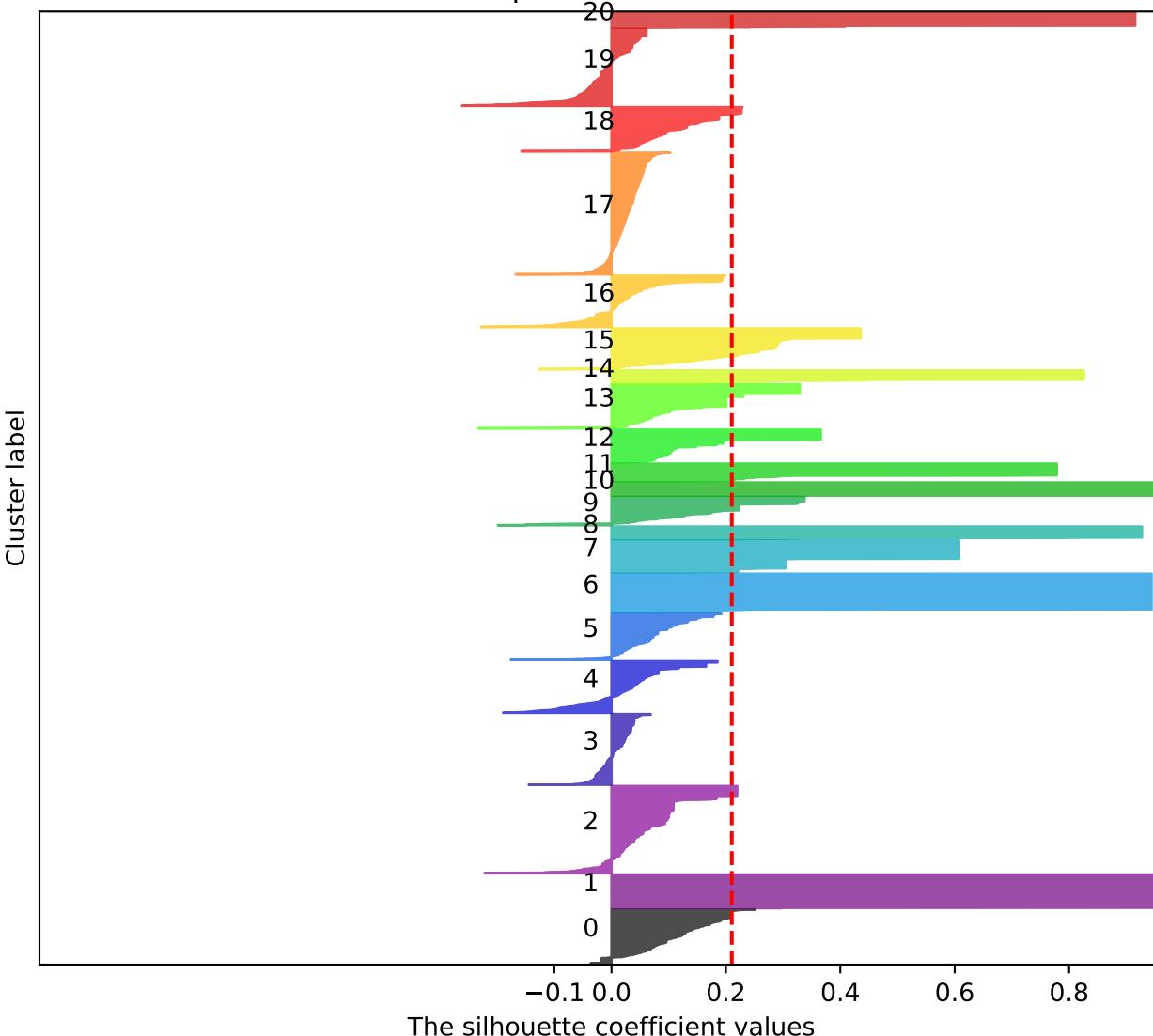


The visualization of the clustered data.

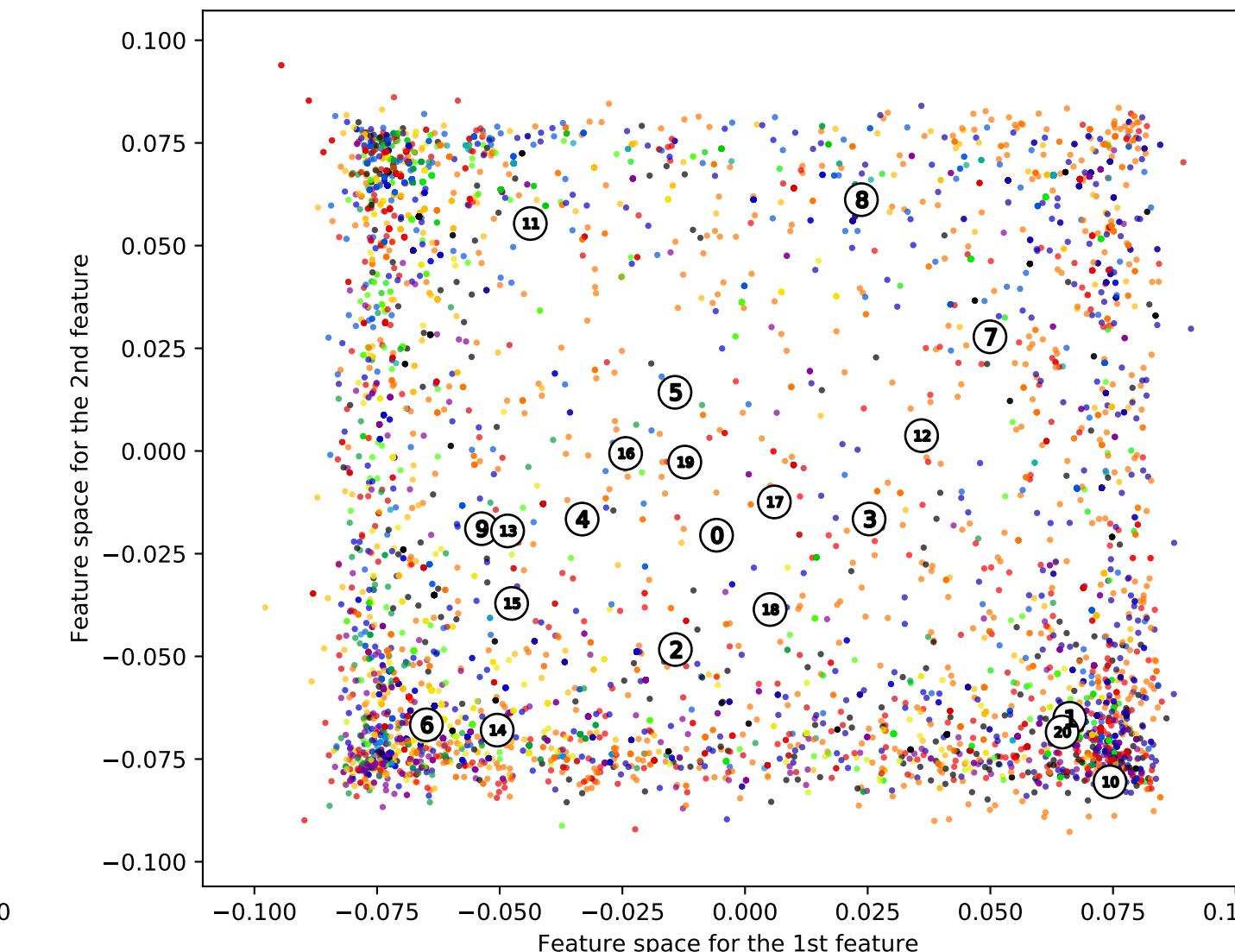


Silhouette analysis for KMeans clustering on sample data with n_clusters = 21 with Average Silhouette of: 0.2103181779384613

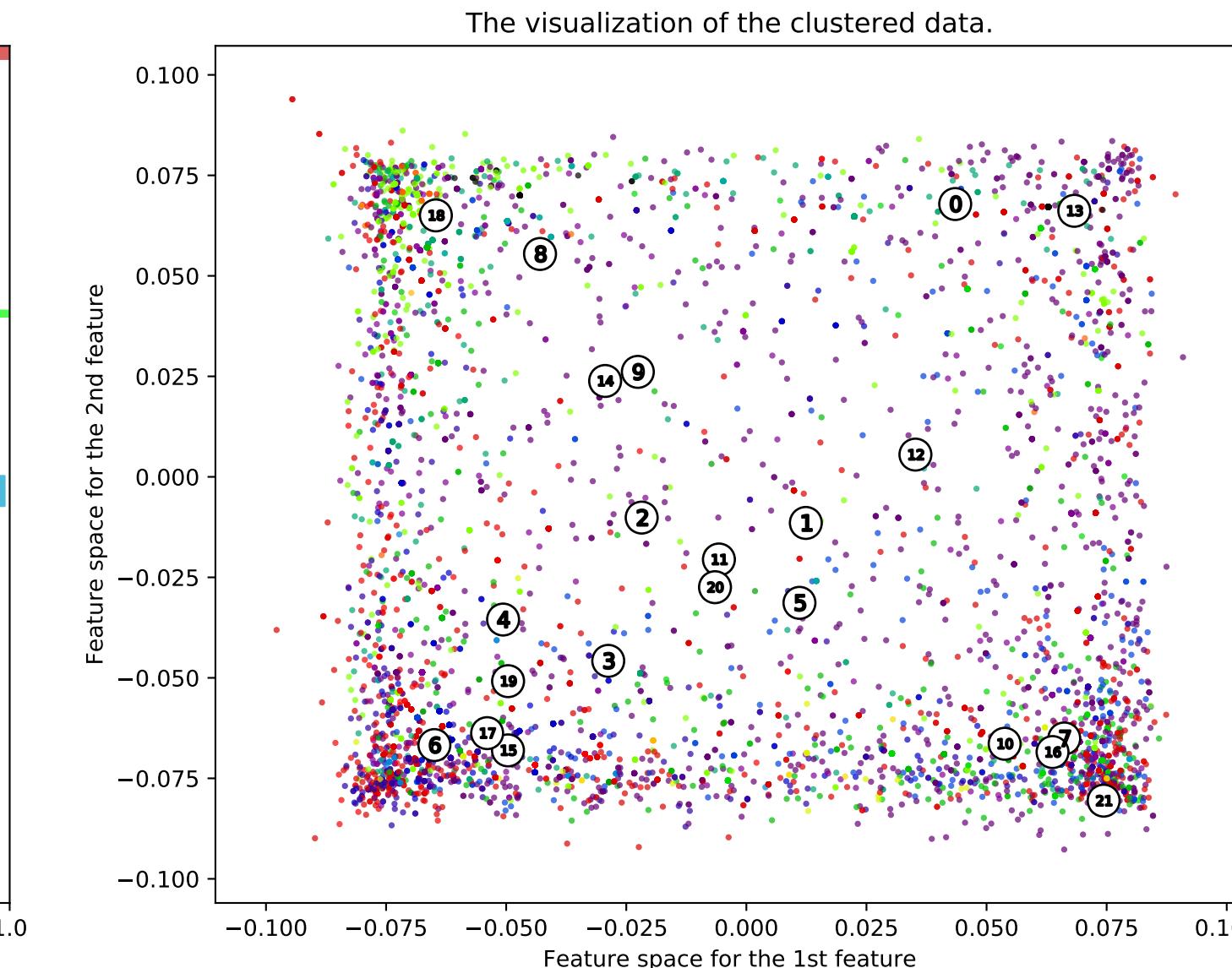
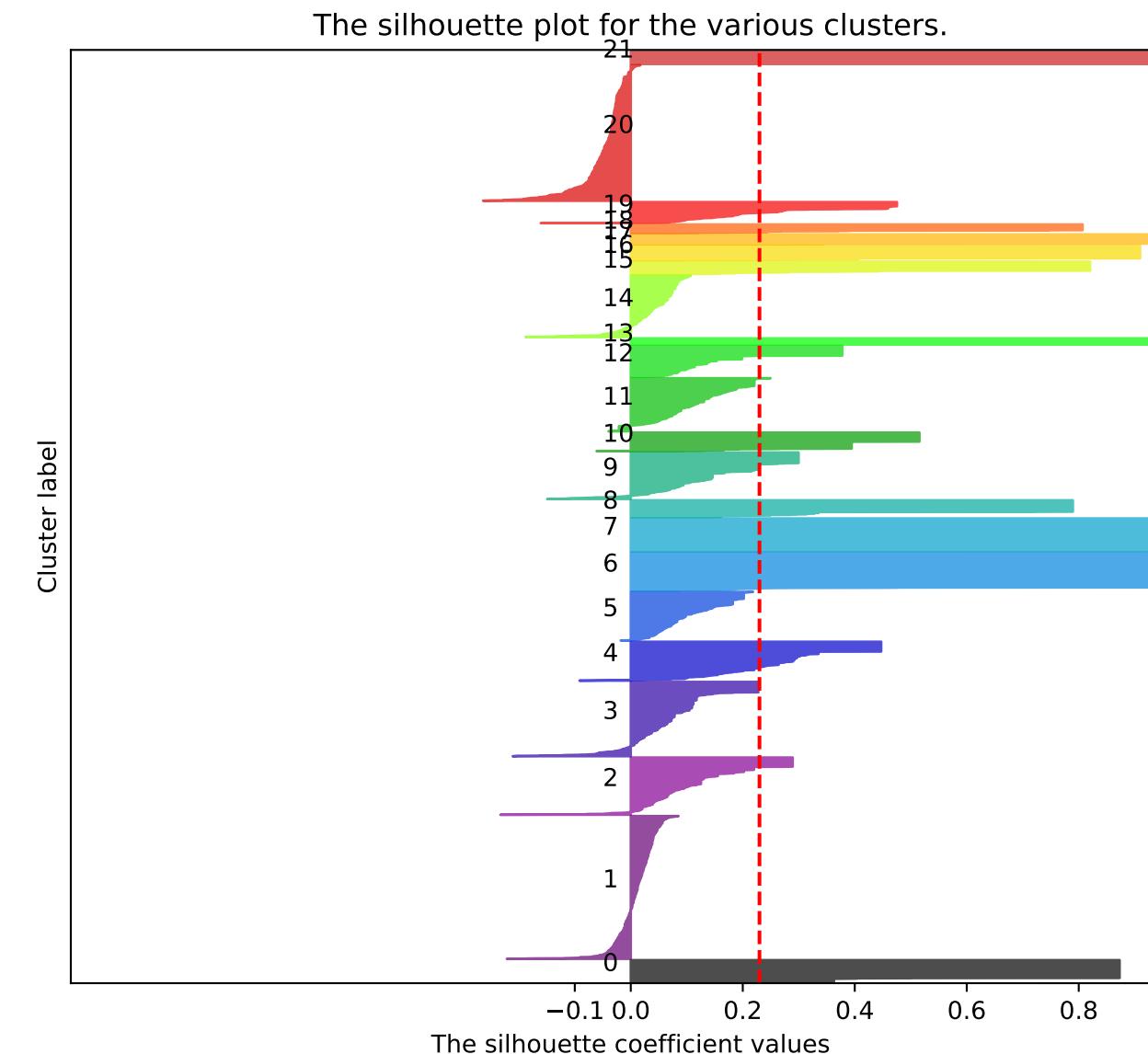
The silhouette plot for the various clusters.



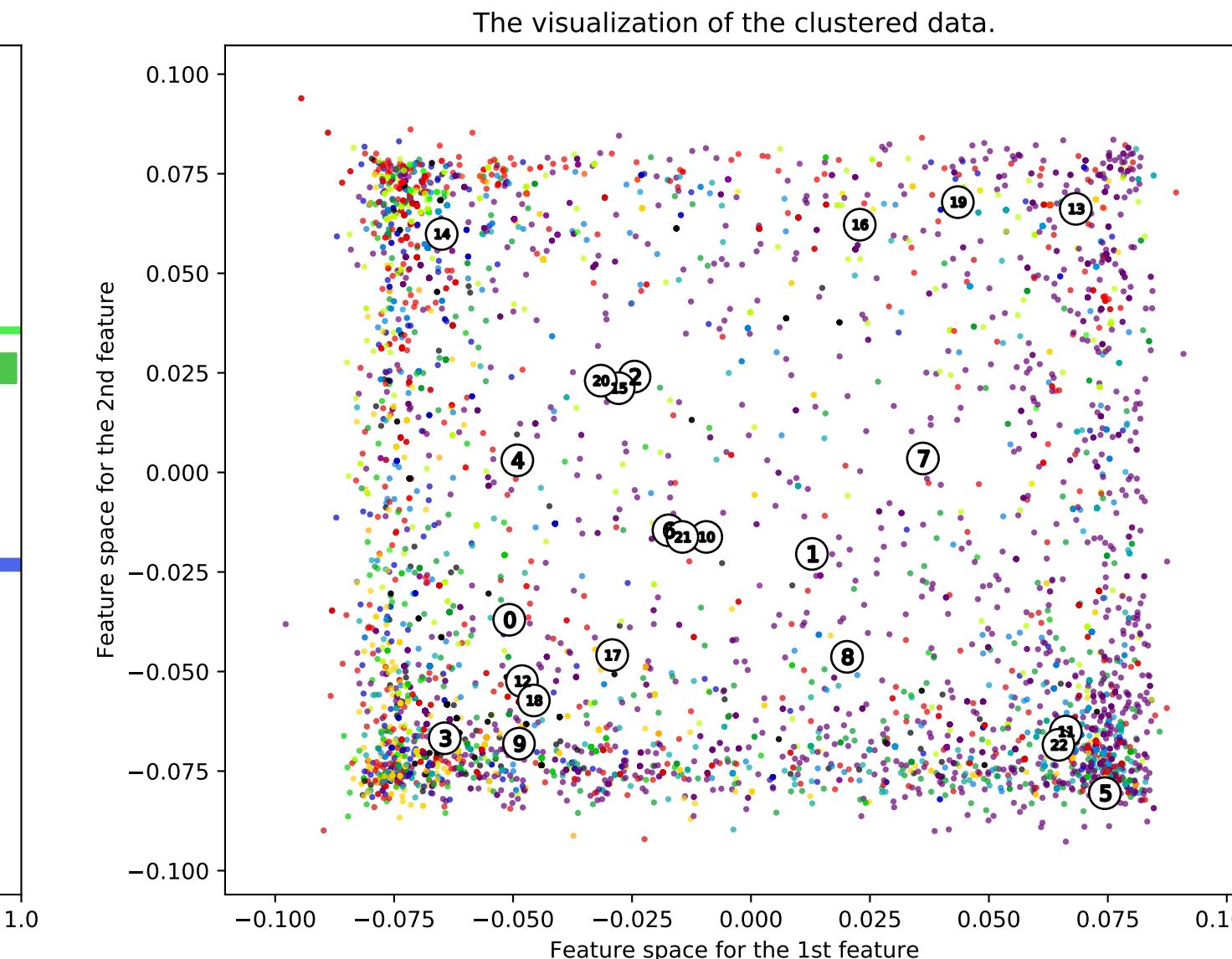
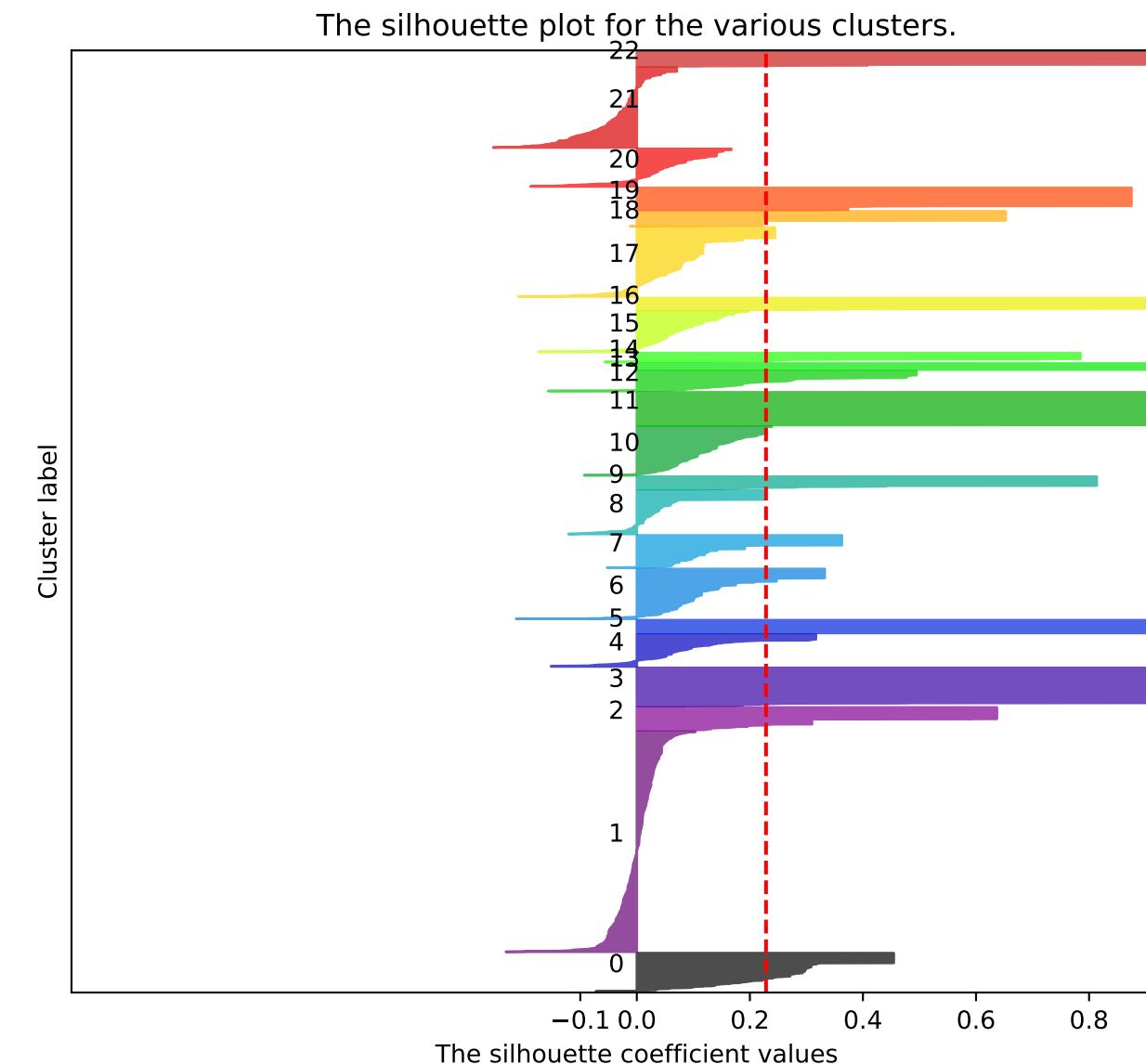
The visualization of the clustered data.



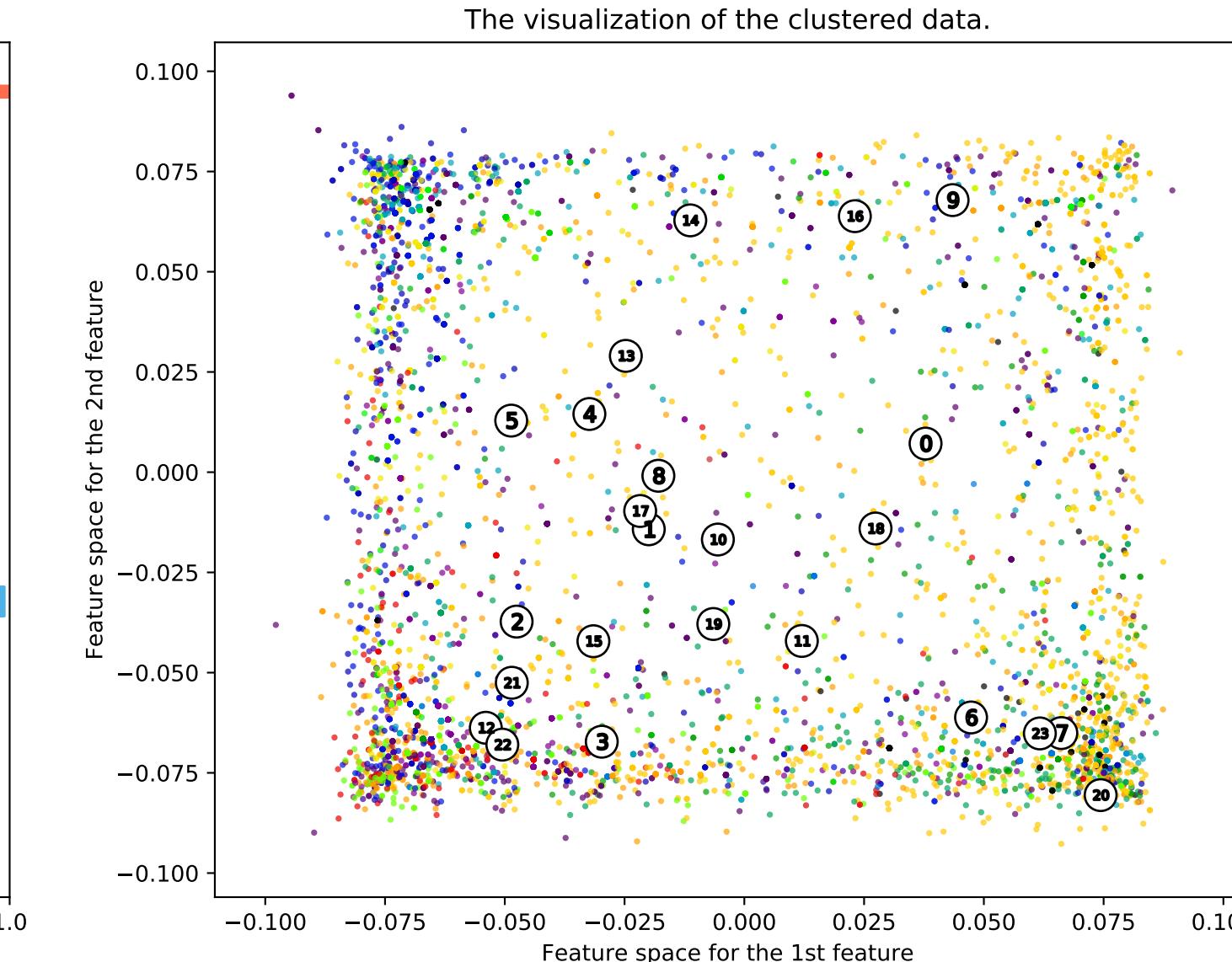
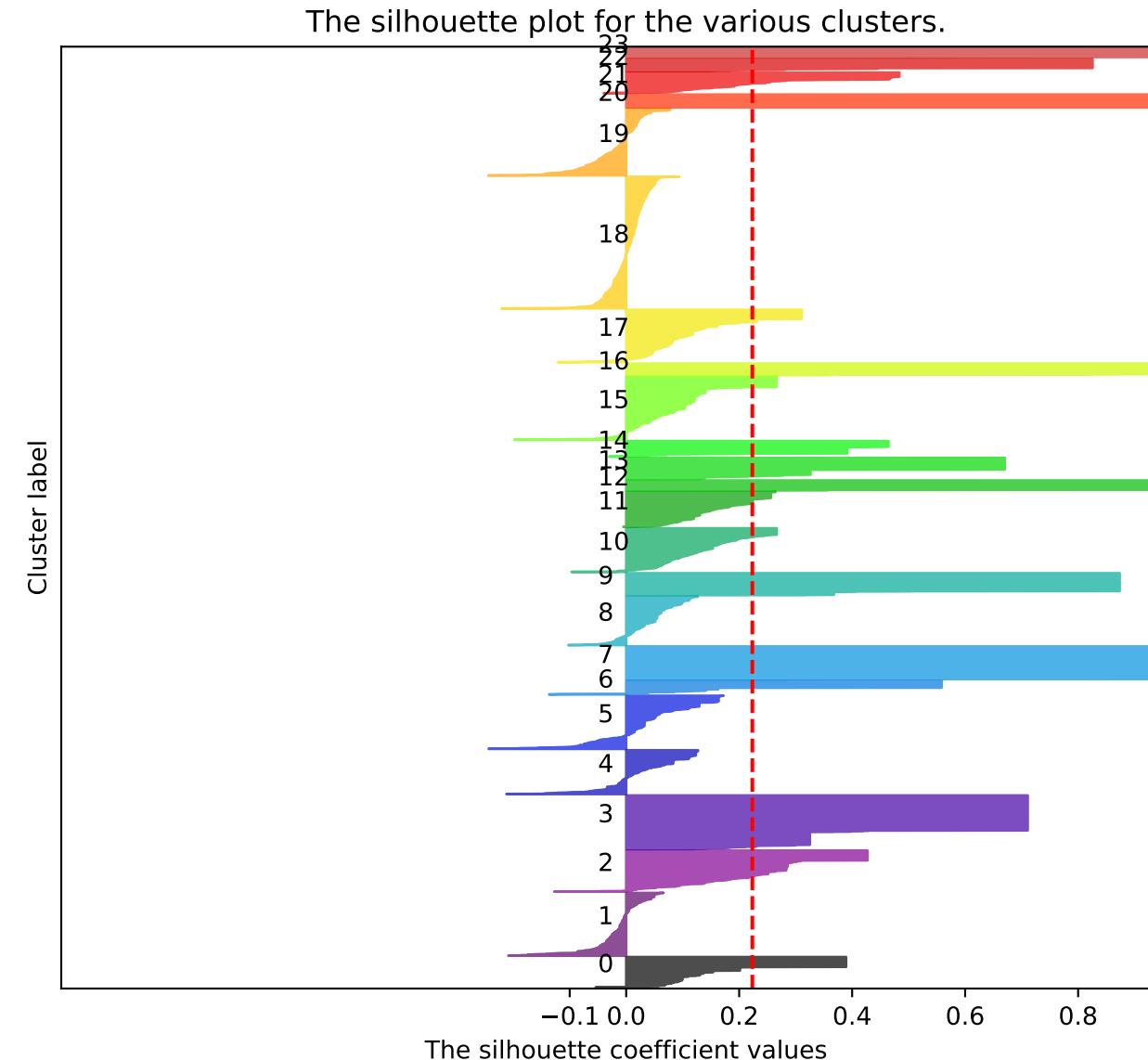
Silhouette analysis for KMeans clustering on sample data with n_clusters = 22 with Average Silhouette of: 0.22983525693416595



Silhouette analysis for KMeans clustering on sample data with n_clusters = 23 with Average Silhouette of: 0.22859349846839905

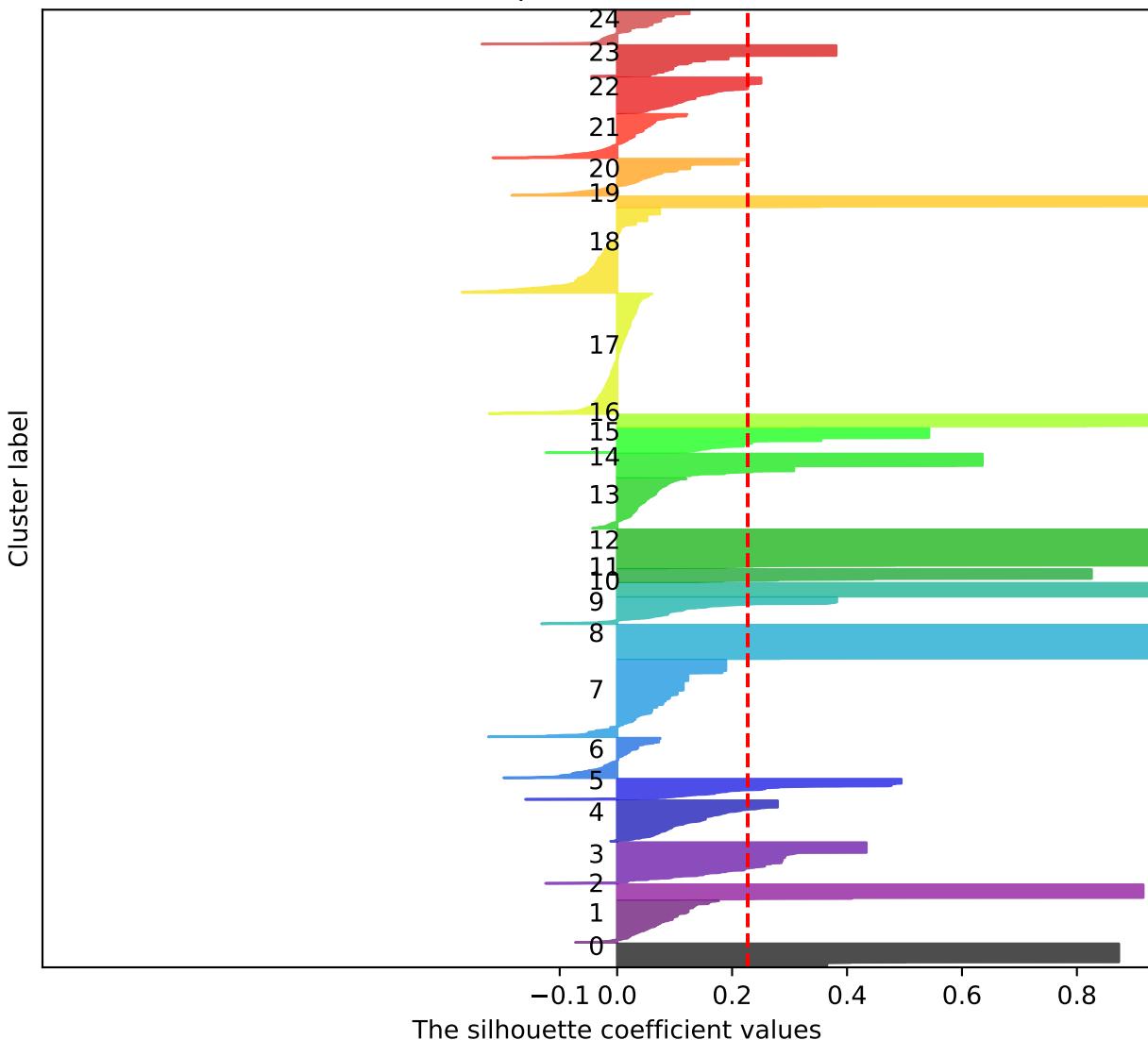


Silhouette analysis for KMeans clustering on sample data with n_clusters = 24 with Average Silhouette of: 0.22333770990371704

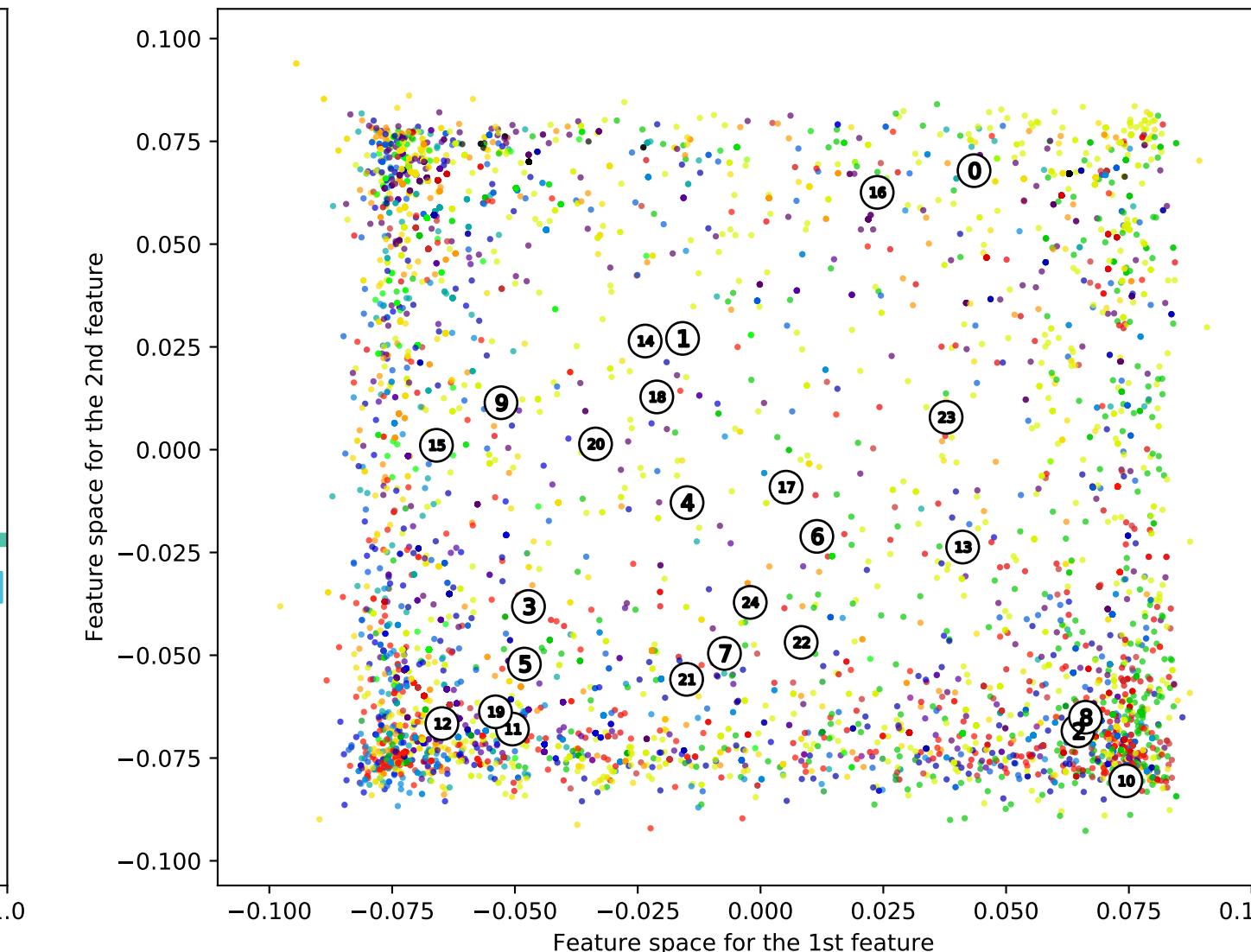


Silhouette analysis for KMeans clustering on sample data with n_clusters = 25 with Average Silhouette of: 0.2271983027458191

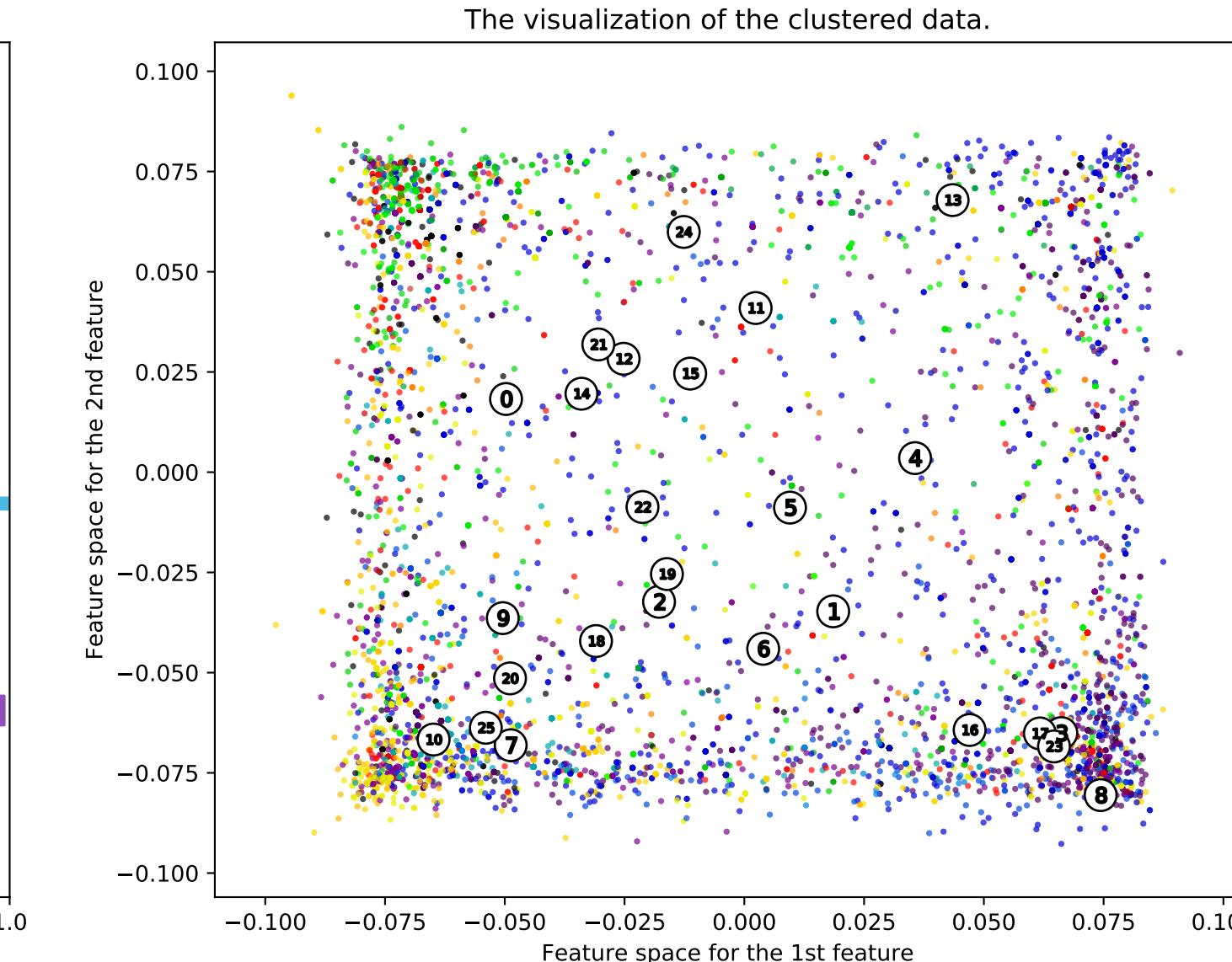
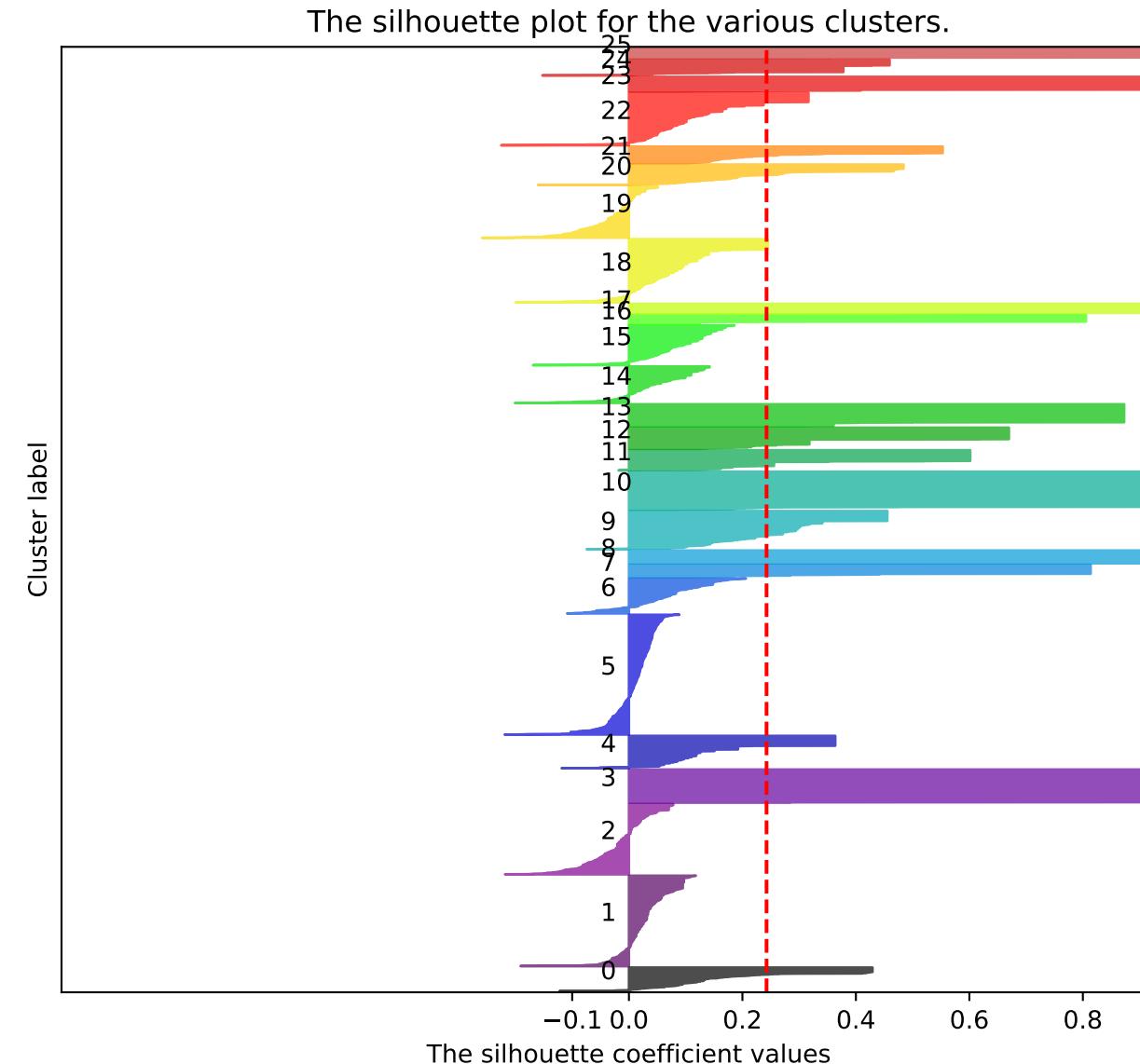
The silhouette plot for the various clusters.



The visualization of the clustered data.

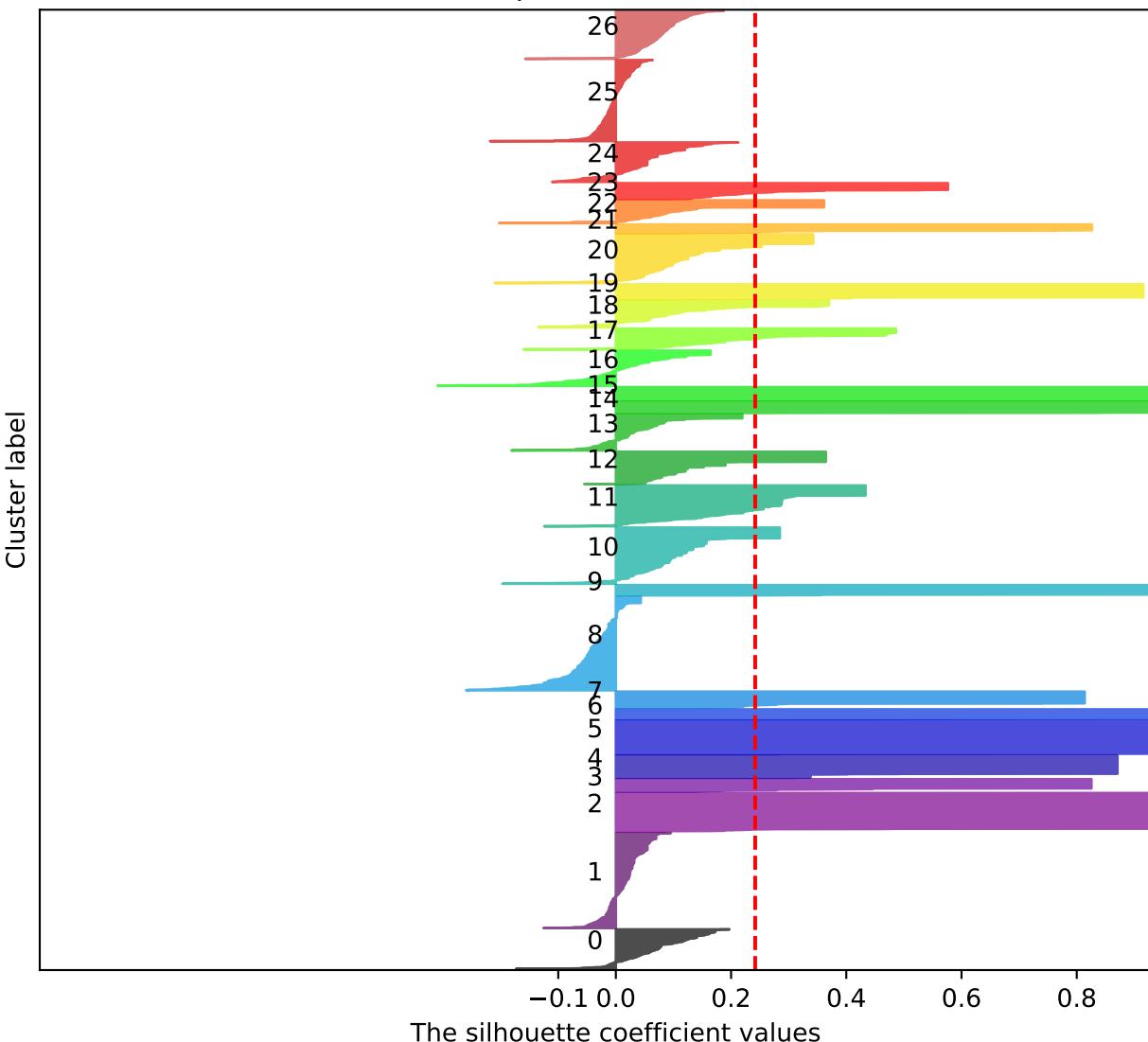


Silhouette analysis for KMeans clustering on sample data with n_clusters = 26 with Average Silhouette of: 0.24252067506313324

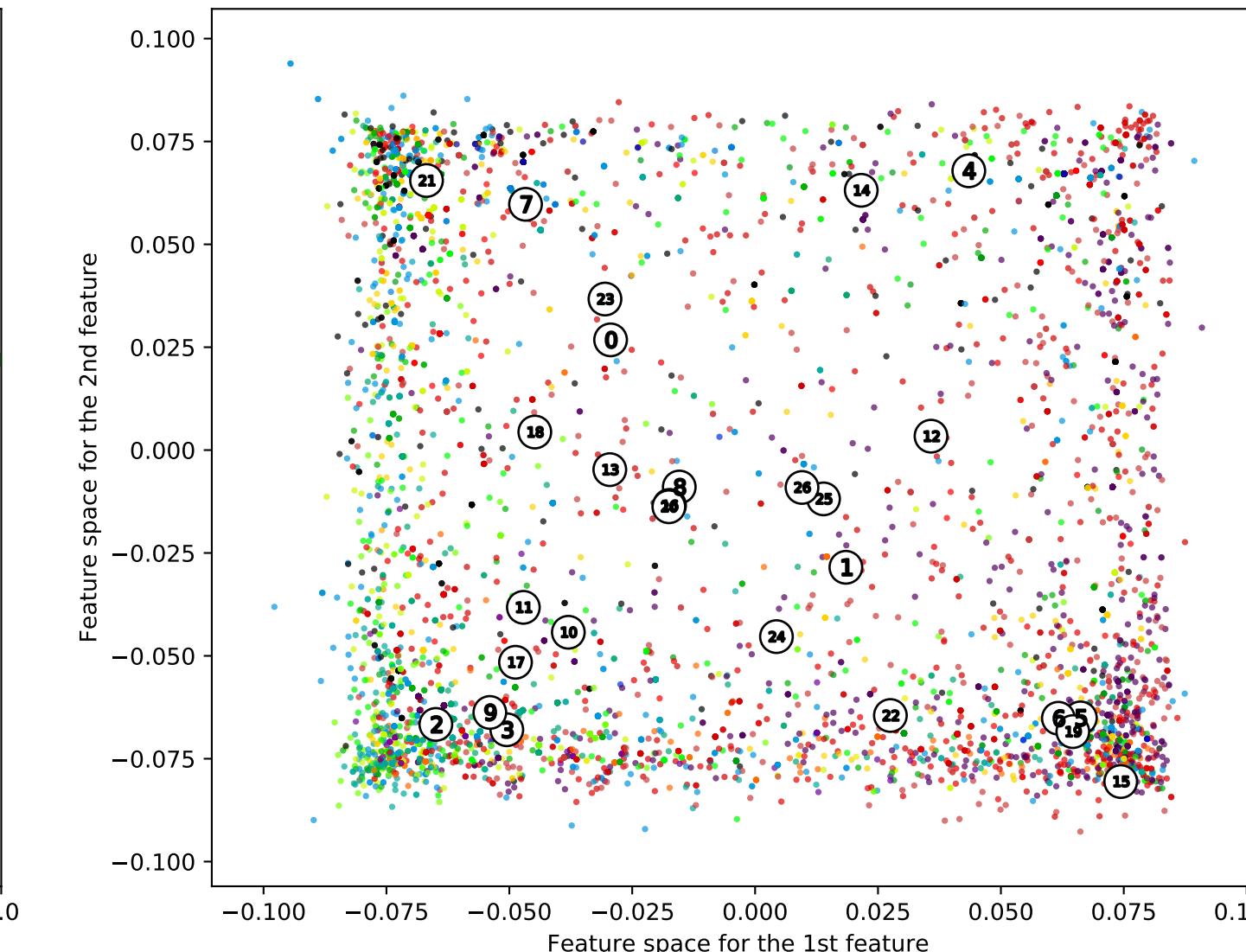


Silhouette analysis for KMeans clustering on sample data with n_clusters = 27 with Average Silhouette of: 0.24183815717697144

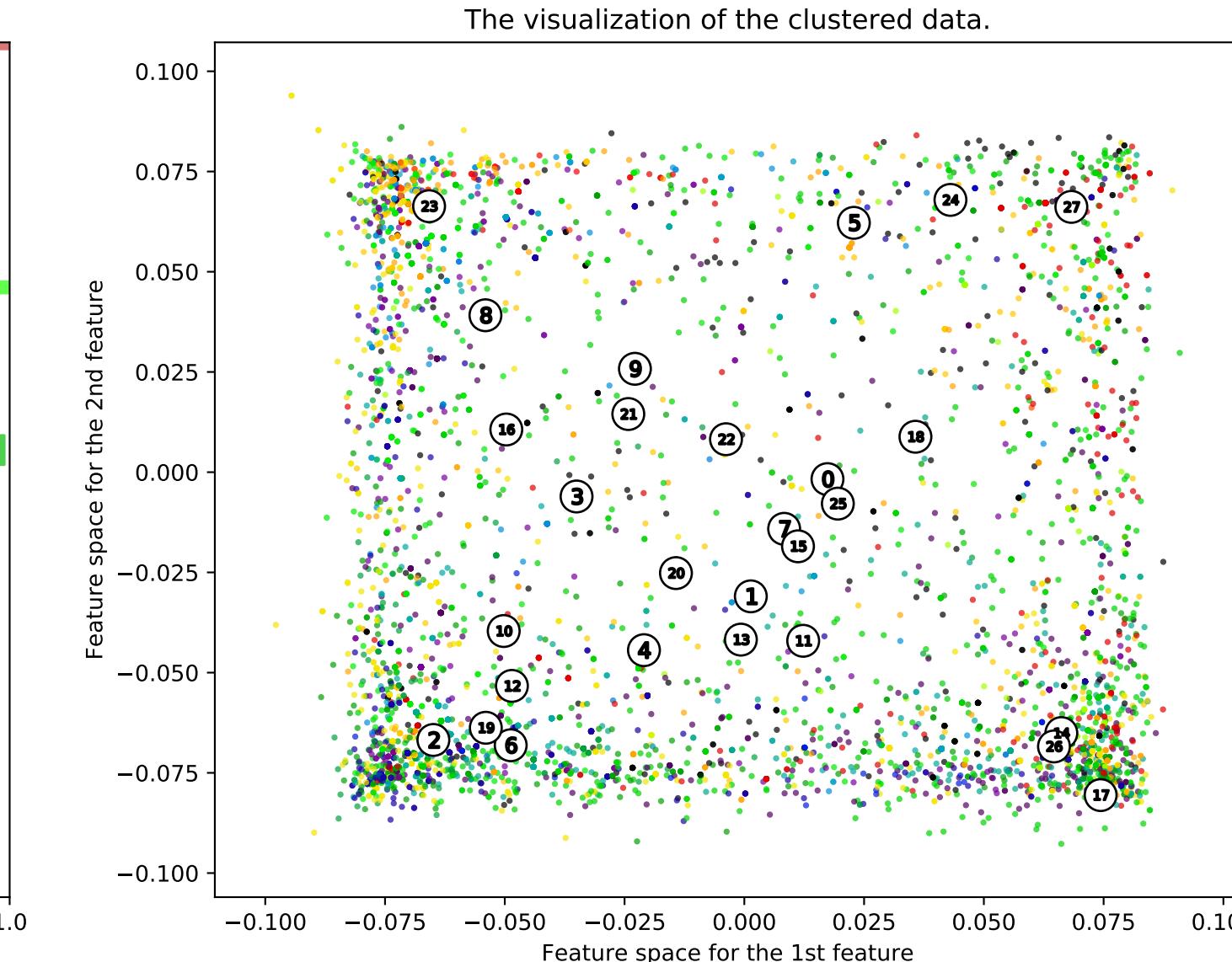
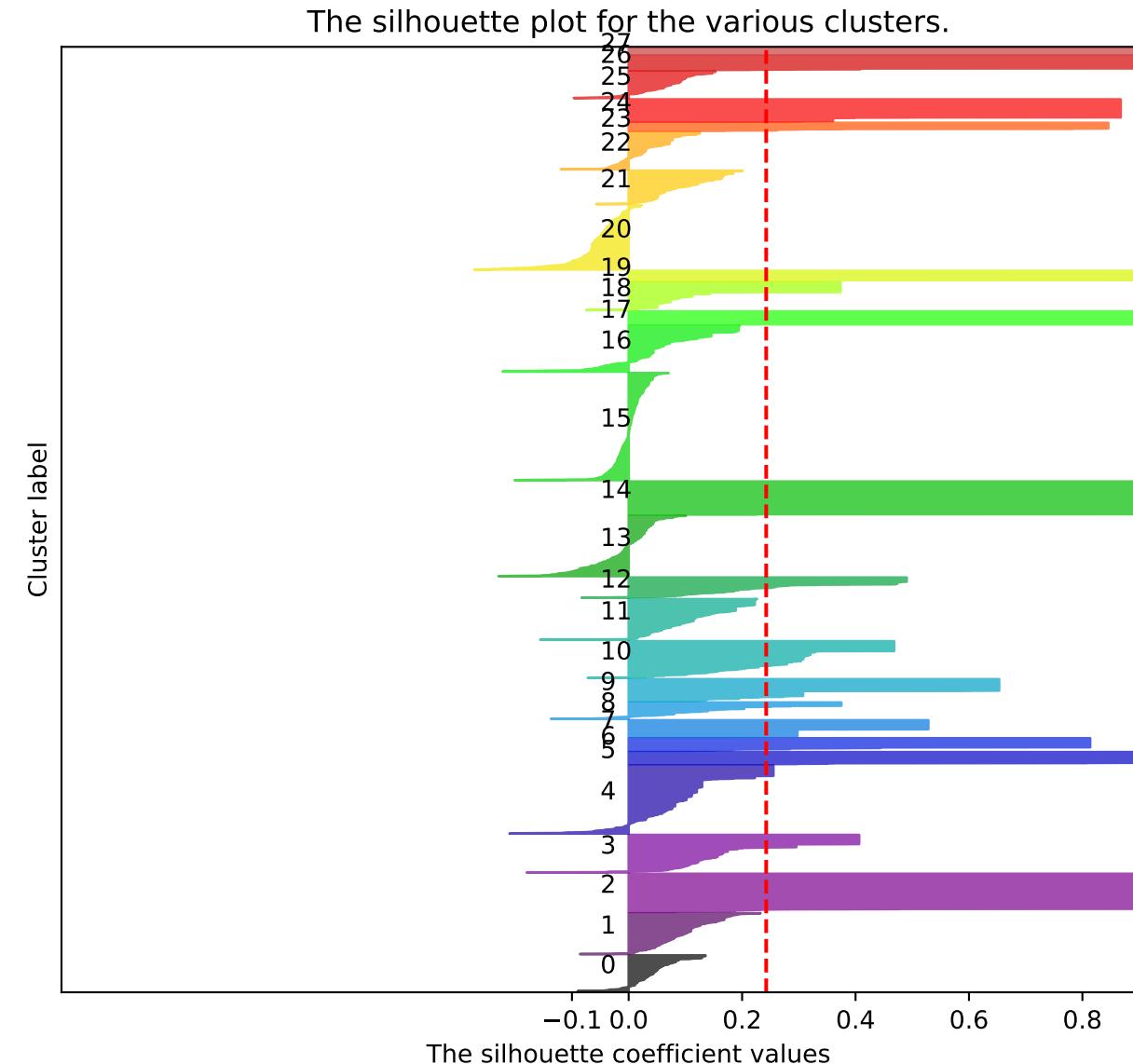
The silhouette plot for the various clusters.



The visualization of the clustered data.

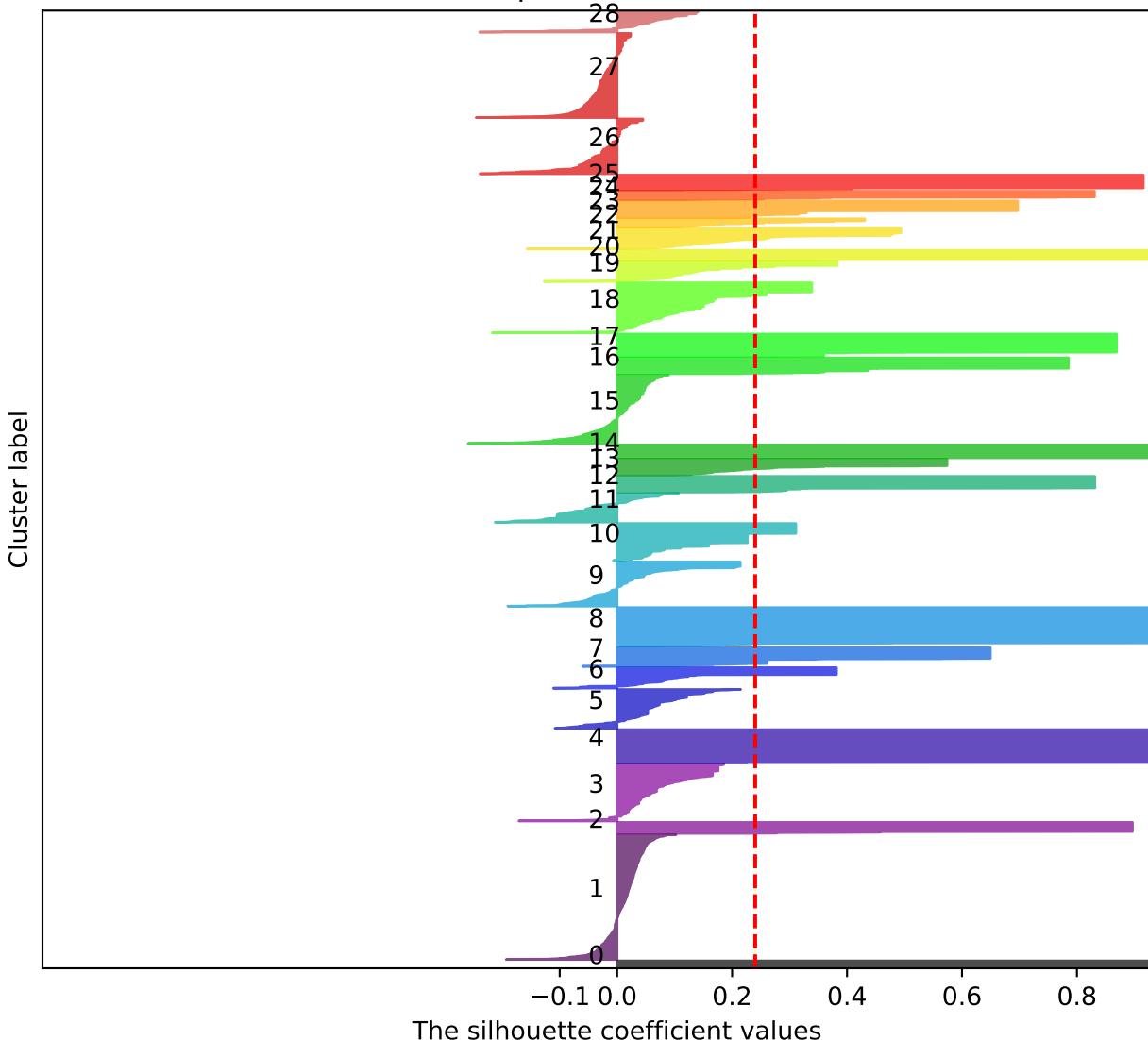


Silhouette analysis for KMeans clustering on sample data with n_clusters = 28 with Average Silhouette of: 0.24248826503753662

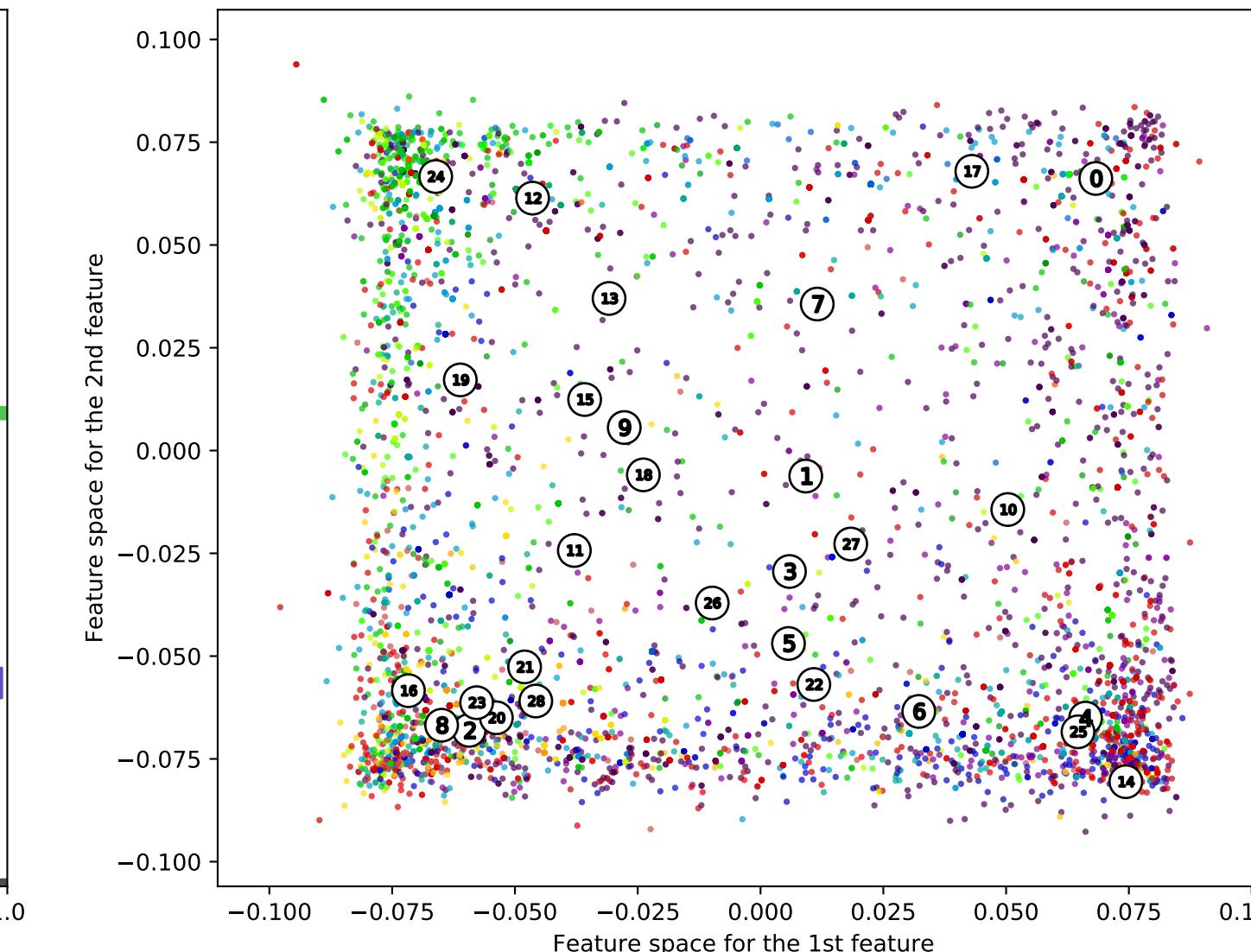


Silhouette analysis for KMeans clustering on sample data with n_clusters = 29 with Average Silhouette of: 0.2401677966117859

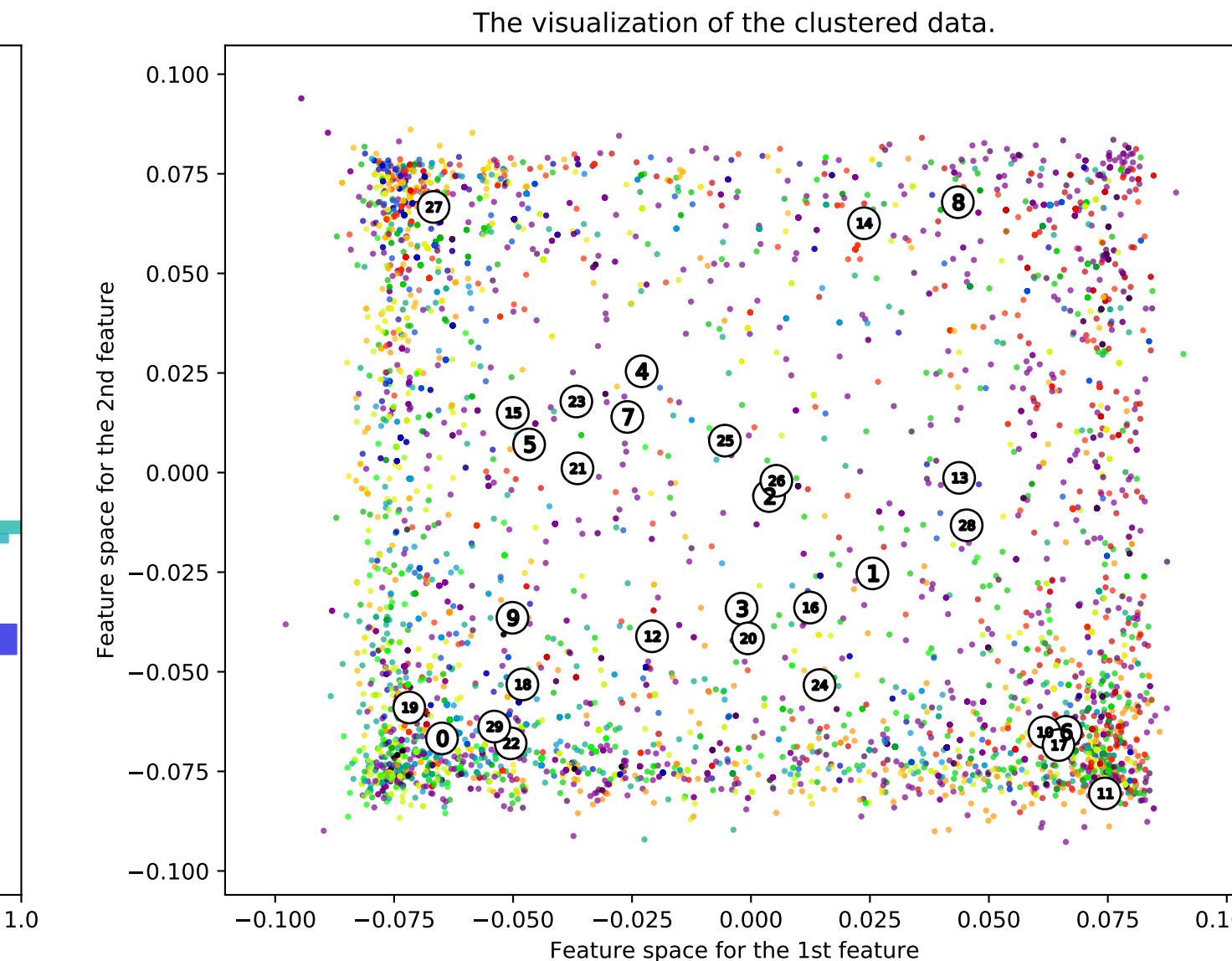
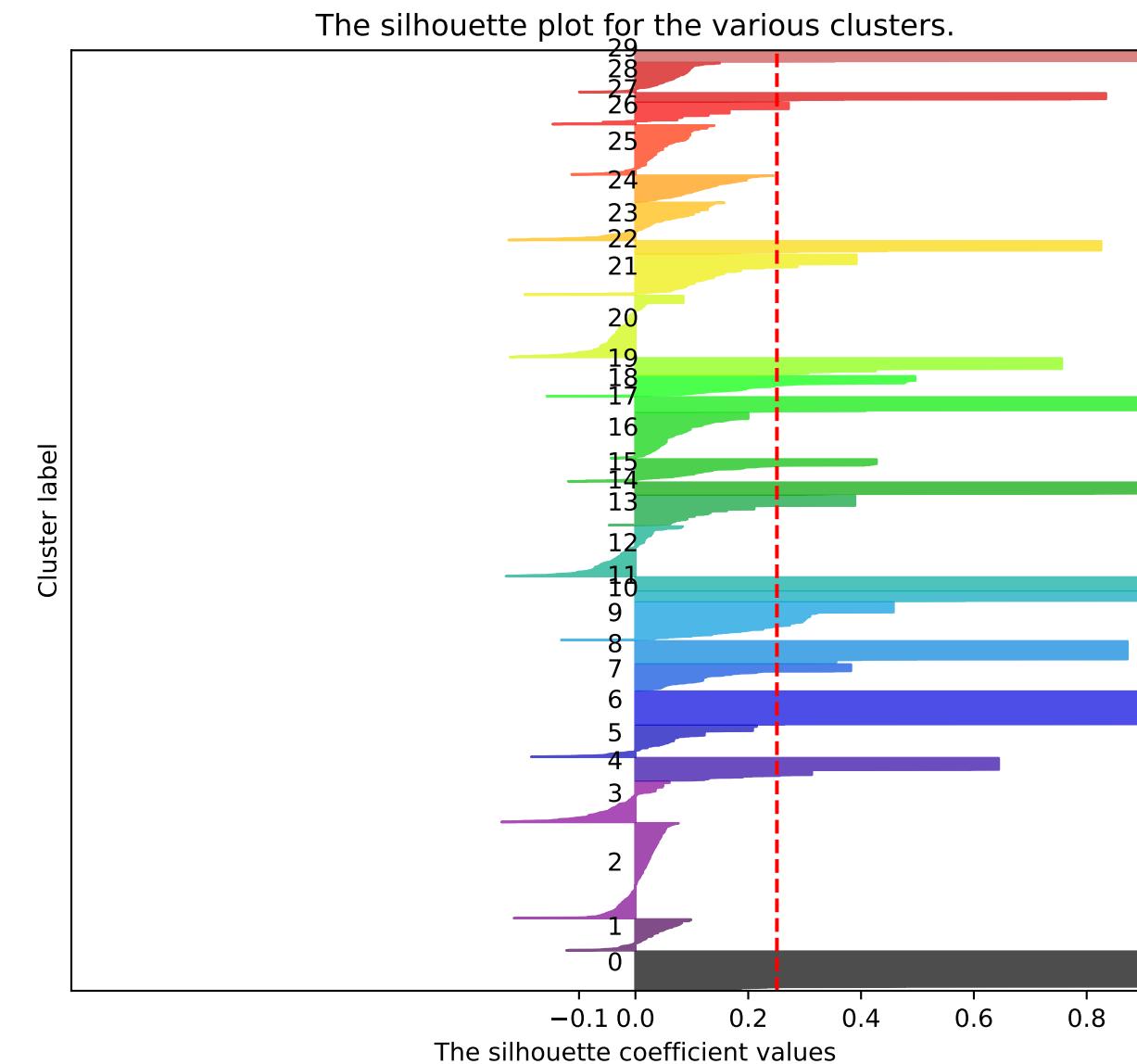
The silhouette plot for the various clusters.



The visualization of the clustered data.

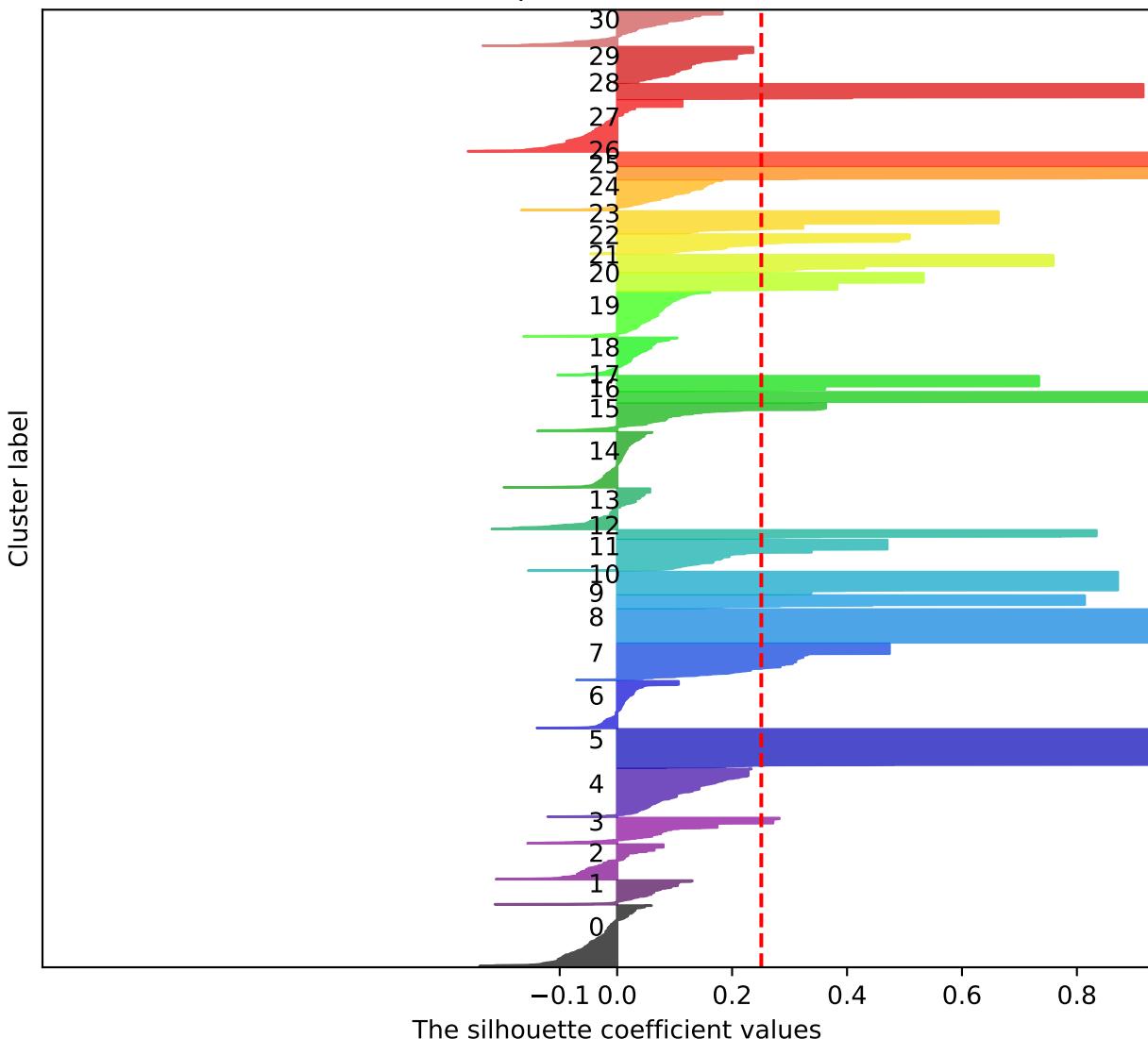


Silhouette analysis for KMeans clustering on sample data with n_clusters = 30 with Average Silhouette of: 0.25084826350212097

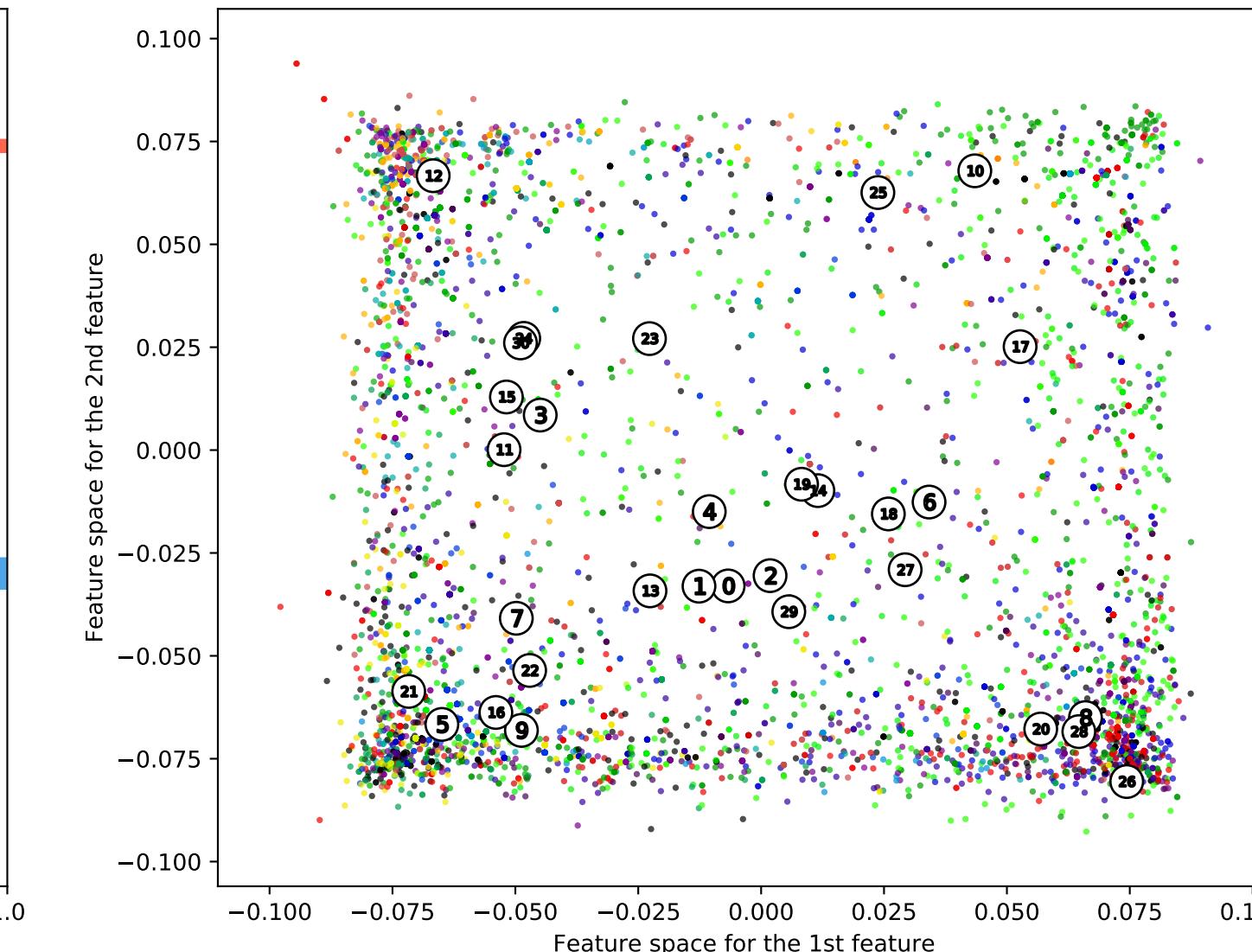


Silhouette analysis for KMeans clustering on sample data with n_clusters = 31 with Average Silhouette of: 0.2508440911769867

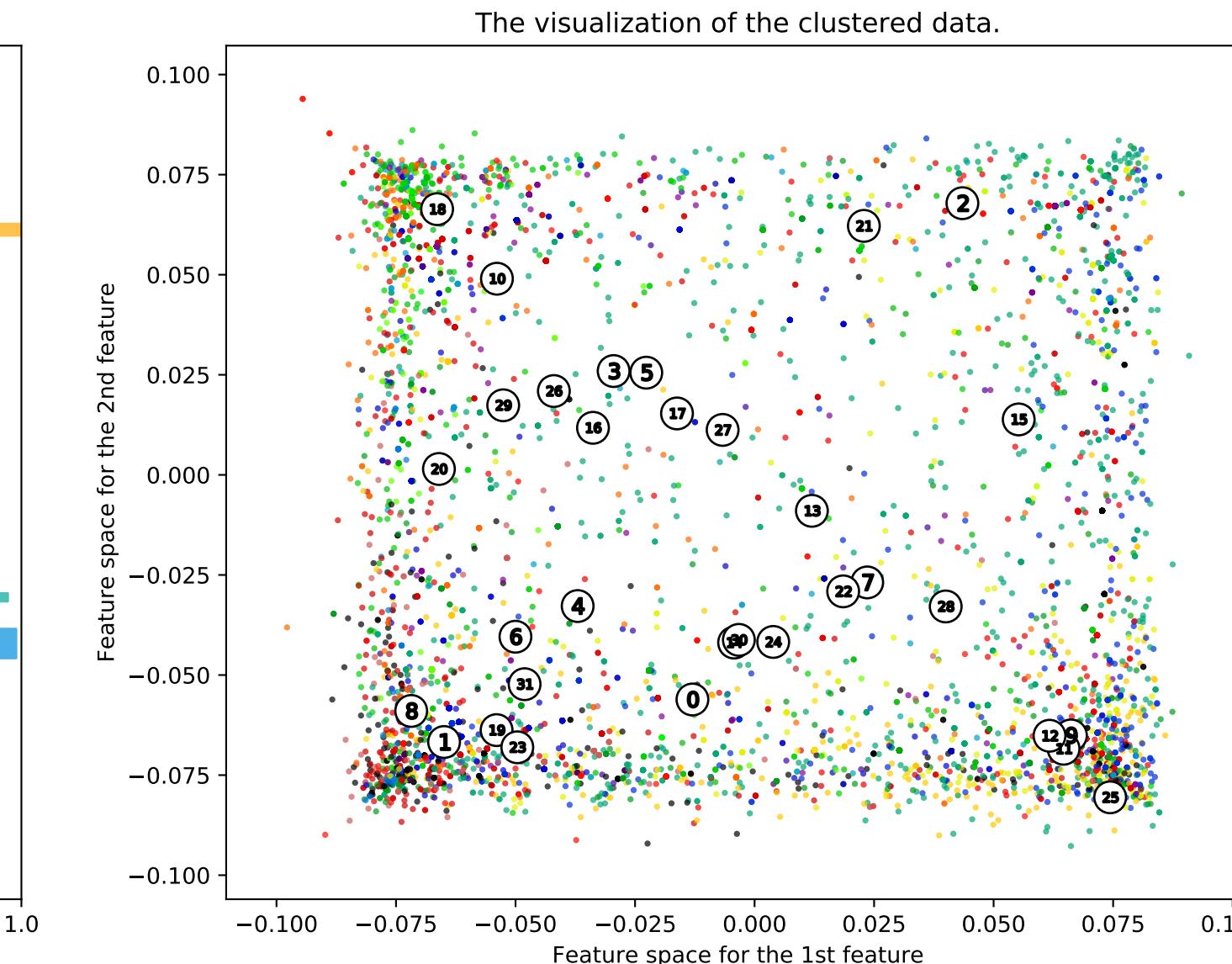
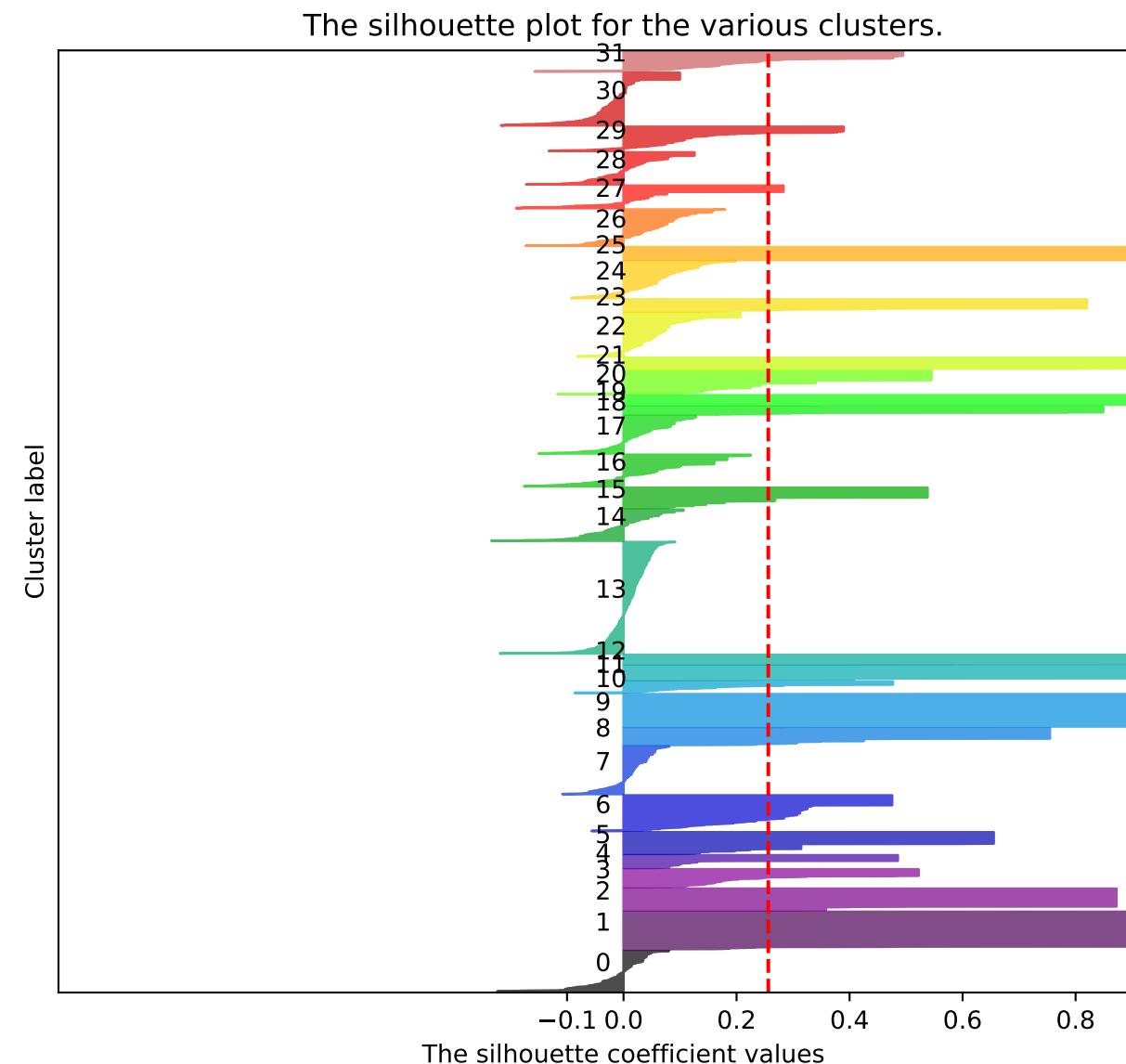
The silhouette plot for the various clusters.



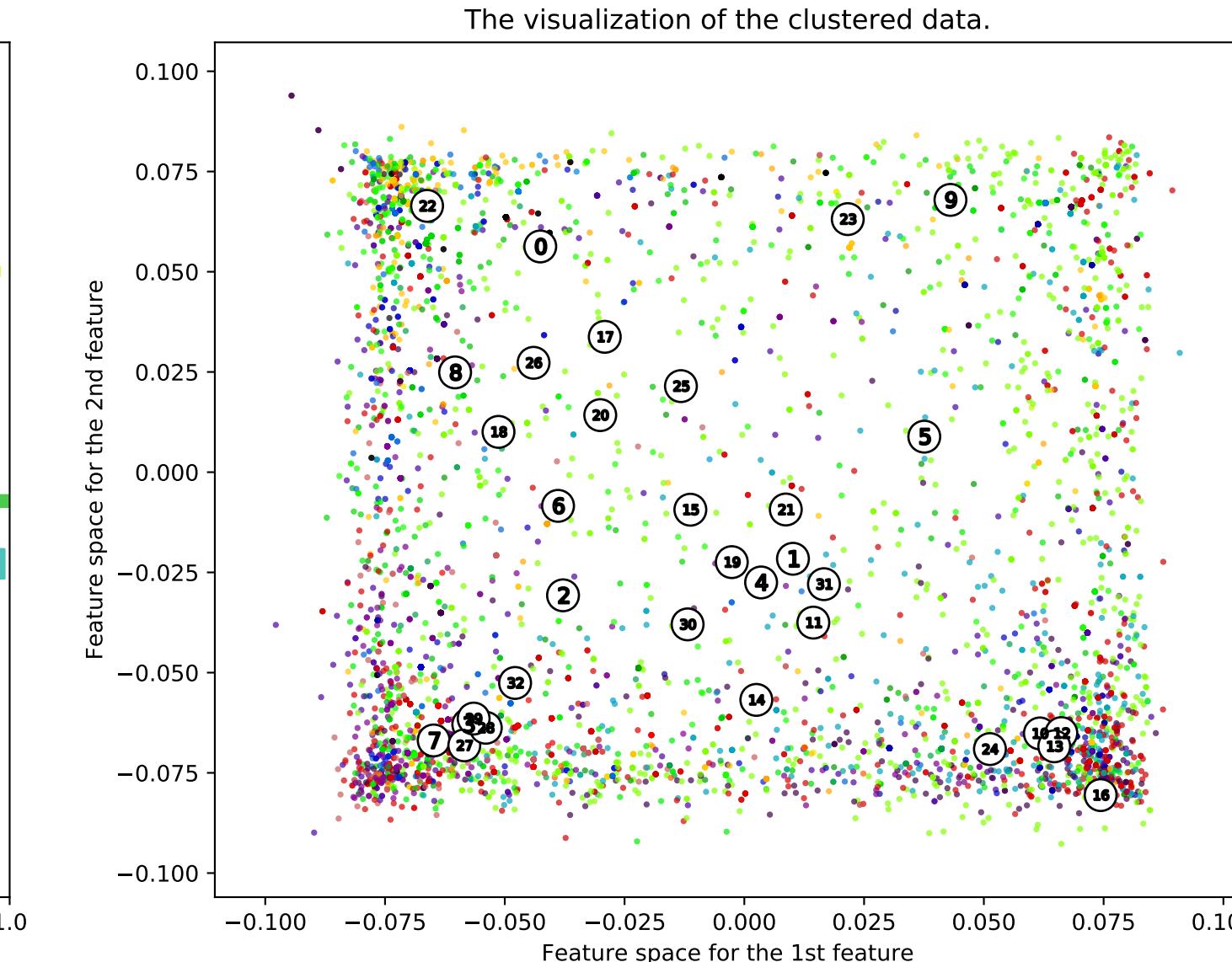
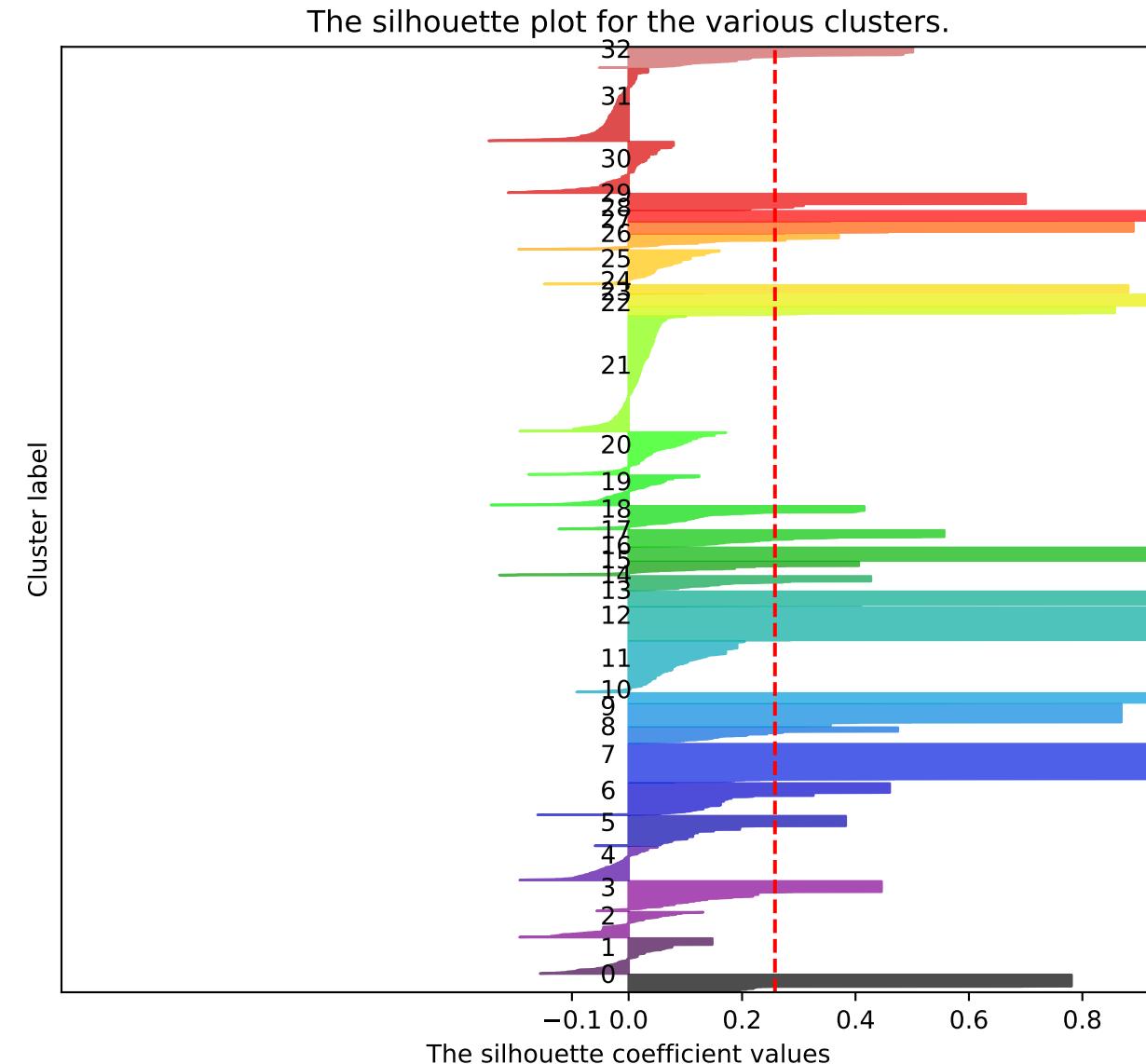
The visualization of the clustered data.



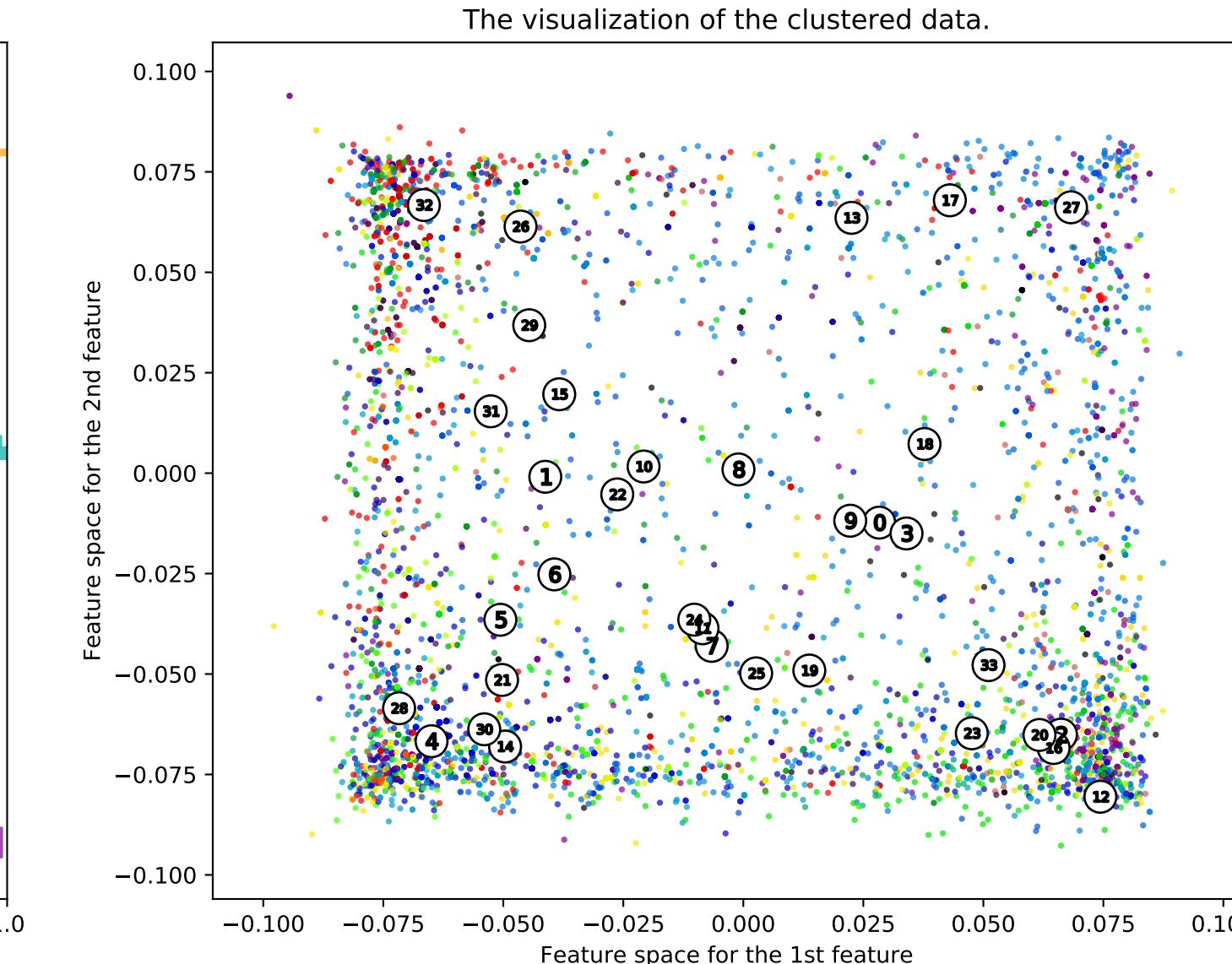
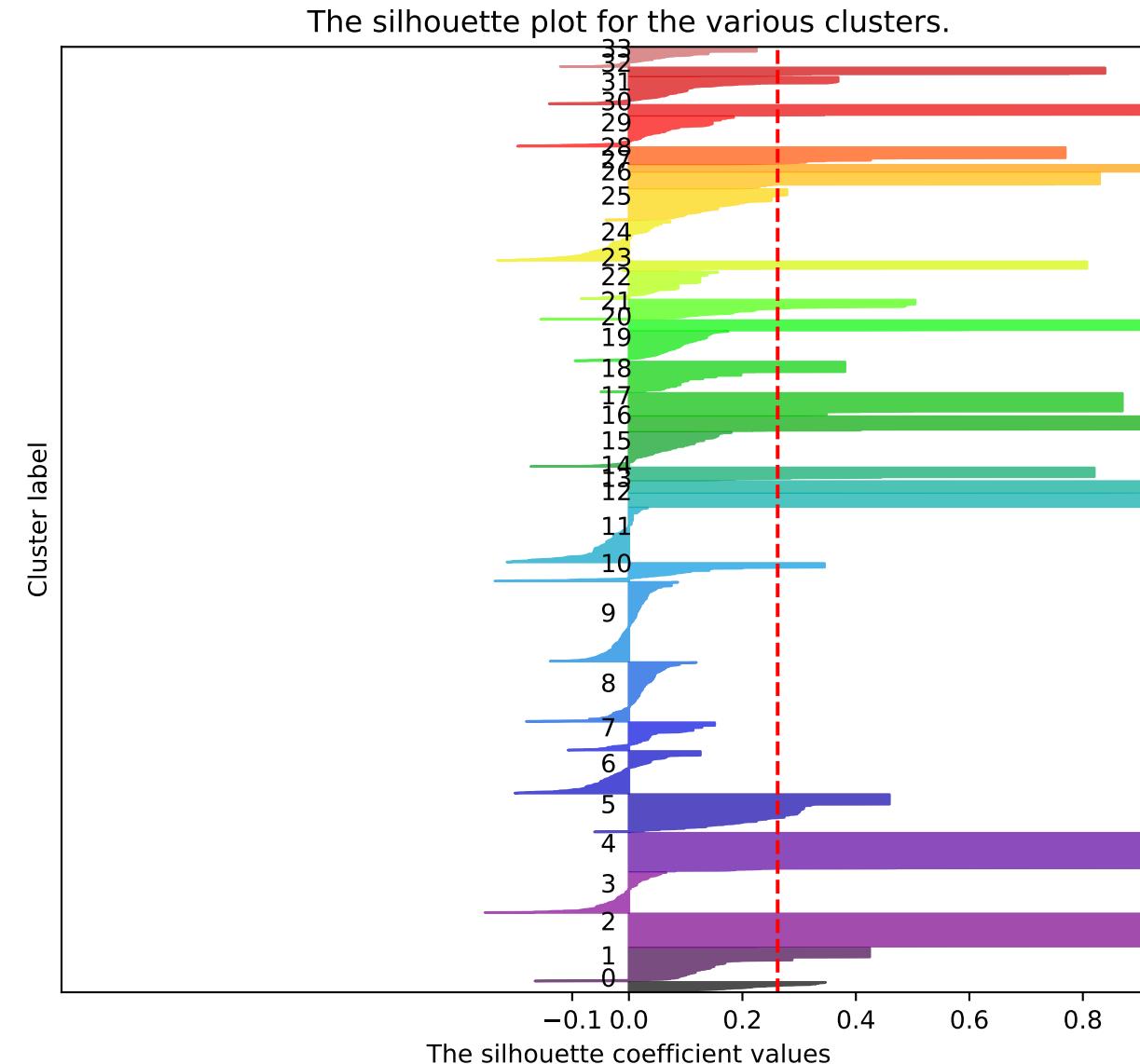
Silhouette analysis for KMeans clustering on sample data with n_clusters = 32 with Average Silhouette of: 0.2561756670475006



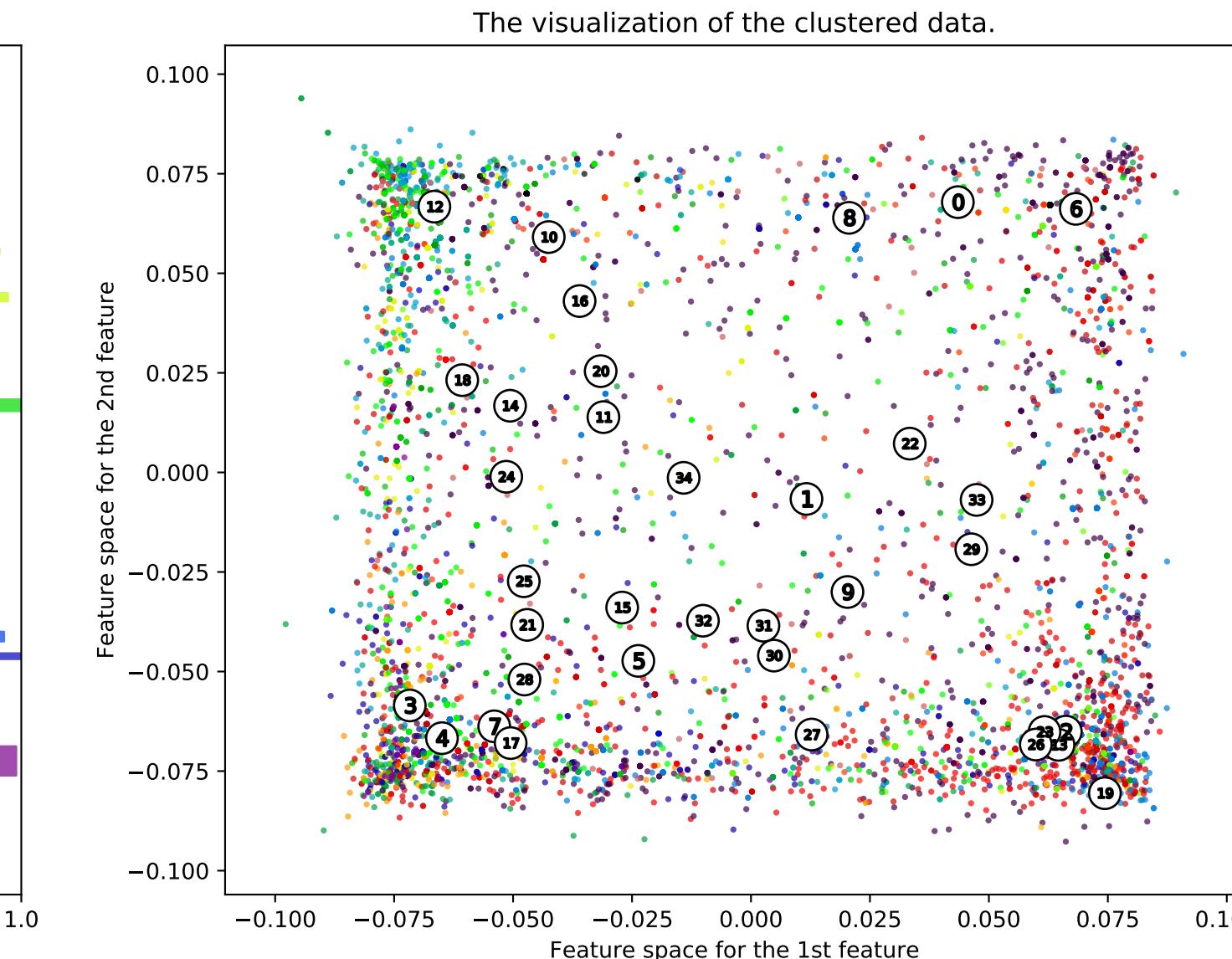
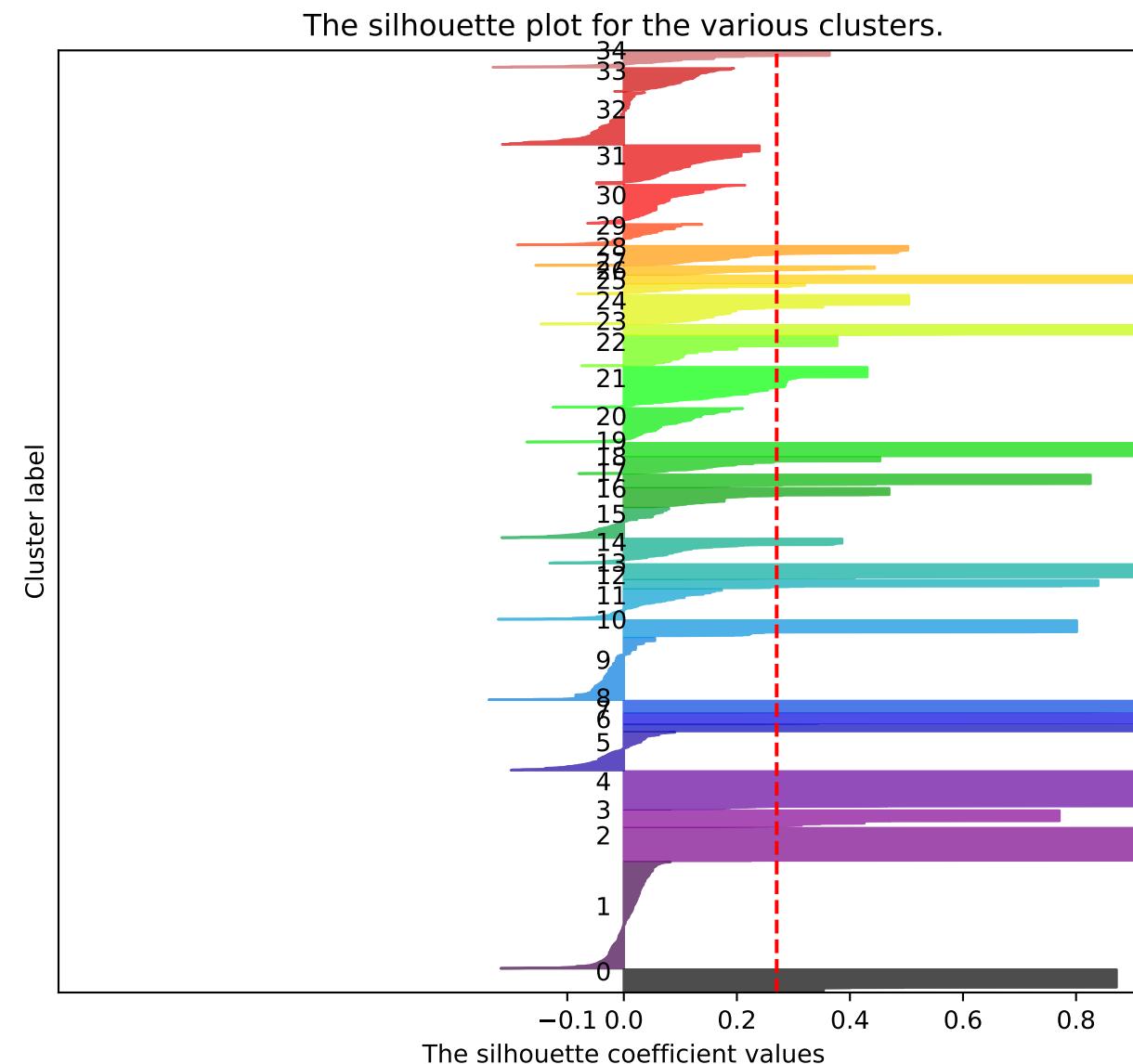
Silhouette analysis for KMeans clustering on sample data with n_clusters = 33 with Average Silhouette of: 0.25799986720085144



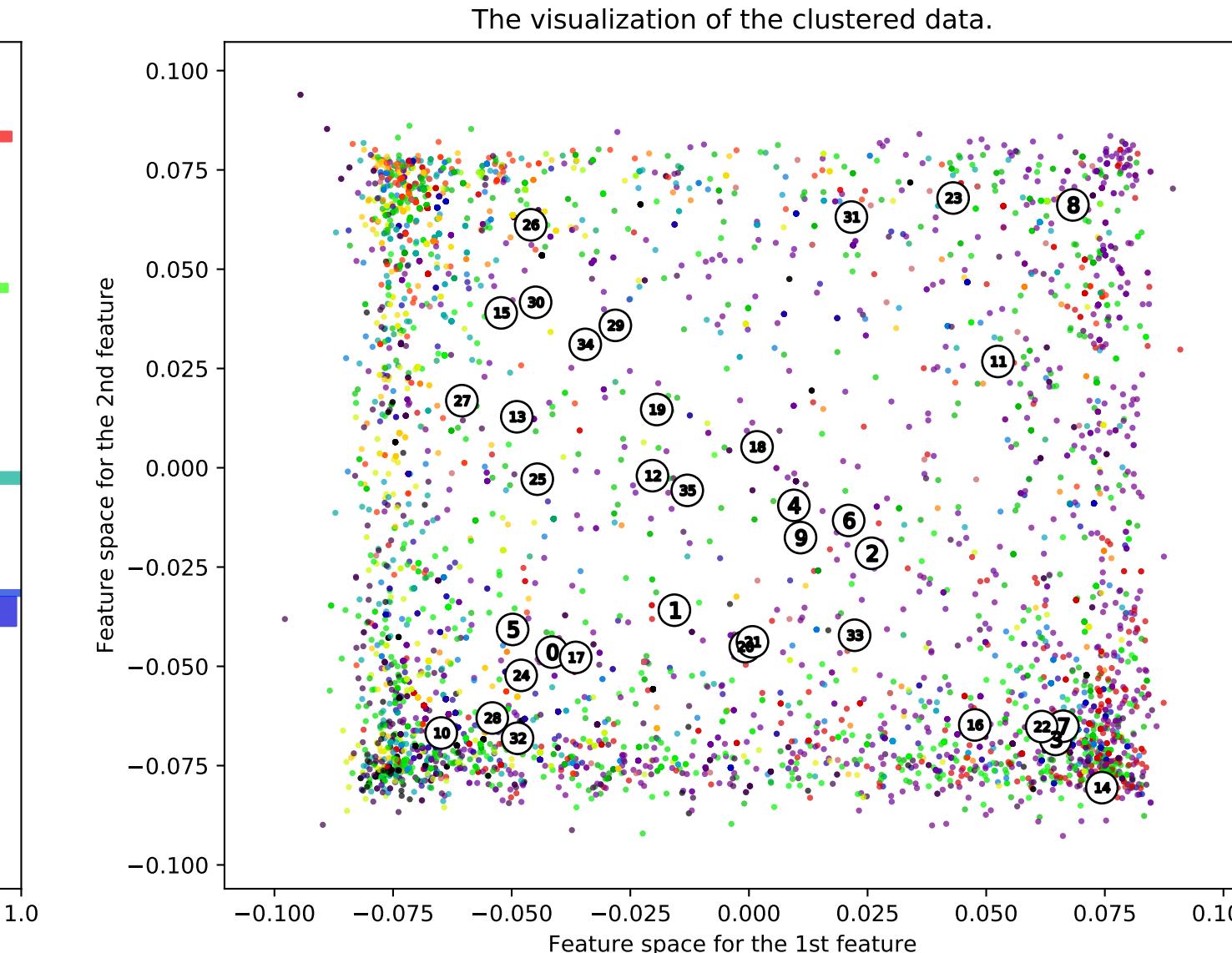
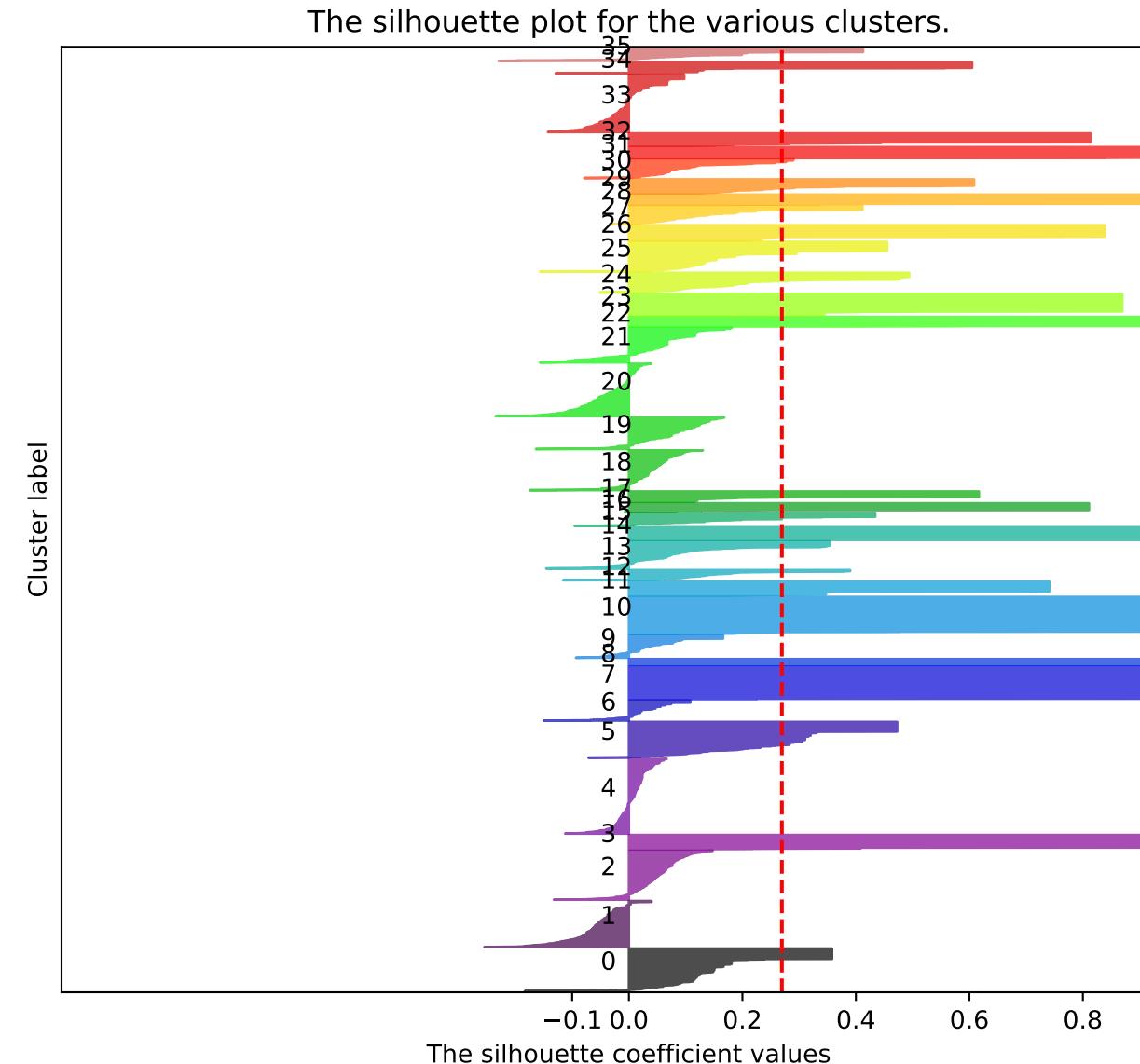
Silhouette analysis for KMeans clustering on sample data with n_clusters = 34 with Average Silhouette of: 0.26213449239730835



Silhouette analysis for KMeans clustering on sample data with n_clusters = 35 with Average Silhouette of: 0.2704170346260071

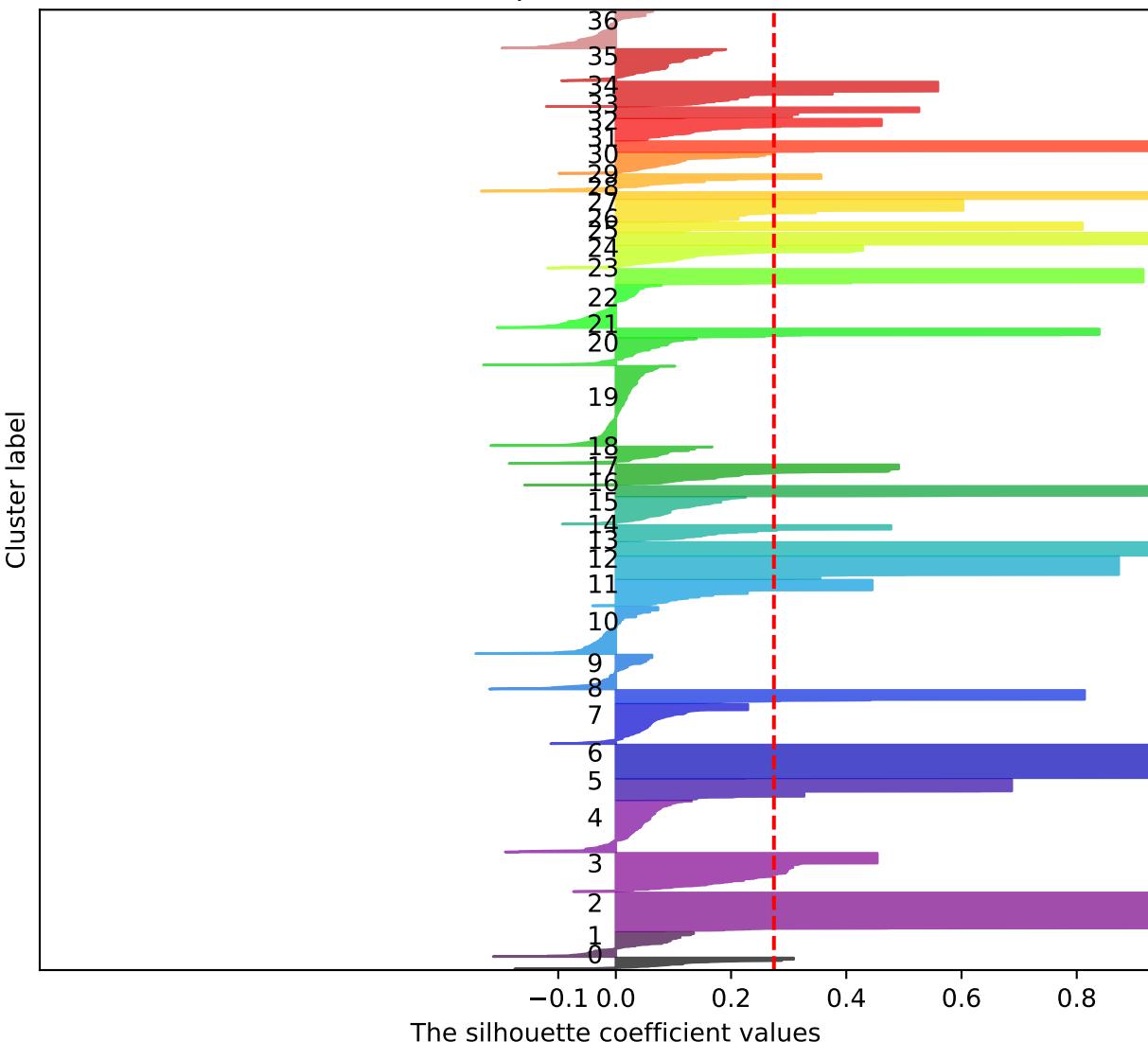


Silhouette analysis for KMeans clustering on sample data with n_clusters = 36 with Average Silhouette of: 0.26959365606307983

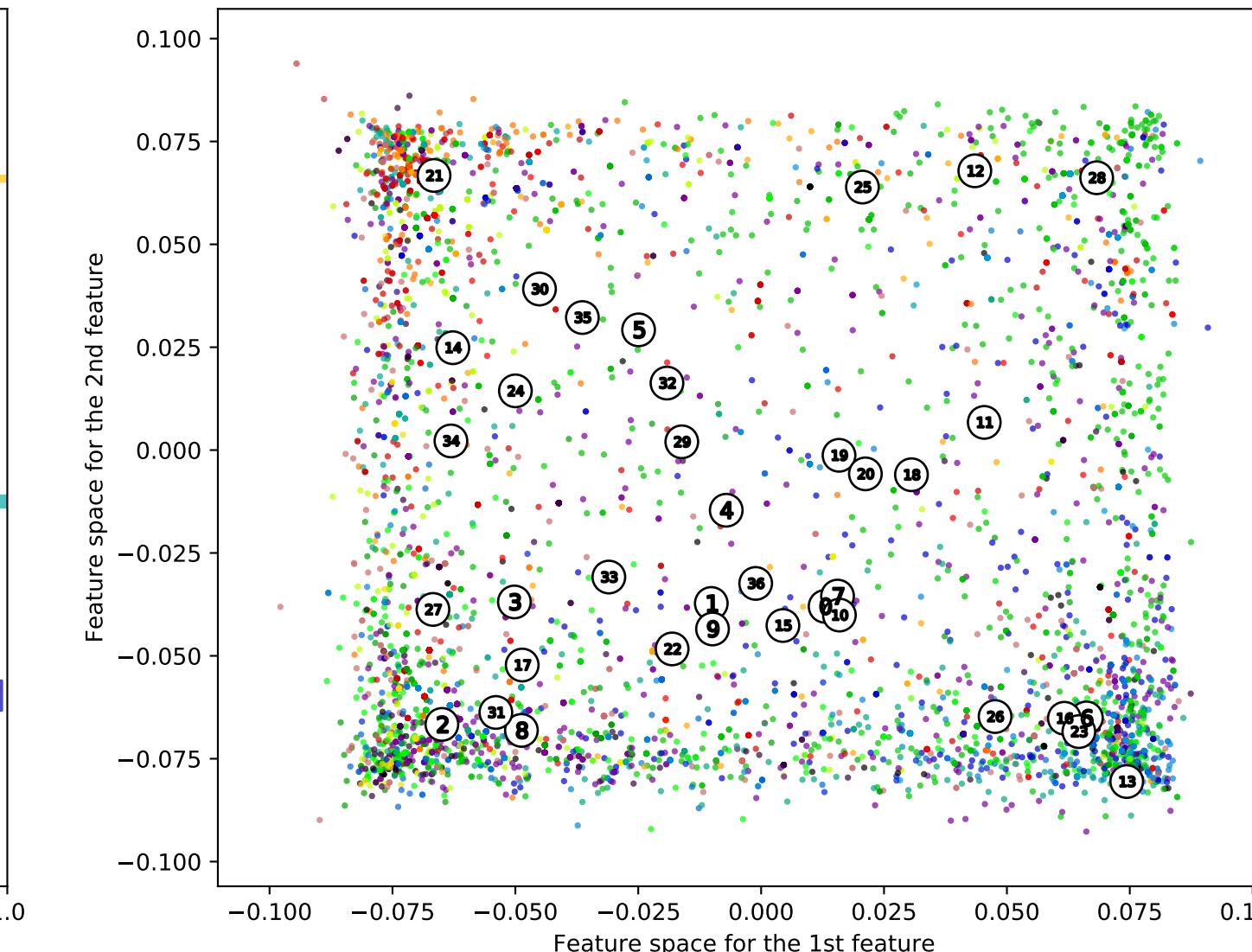


Silhouette analysis for KMeans clustering on sample data with n_clusters = 37 with Average Silhouette of: 0.27440524101257324

The silhouette plot for the various clusters.

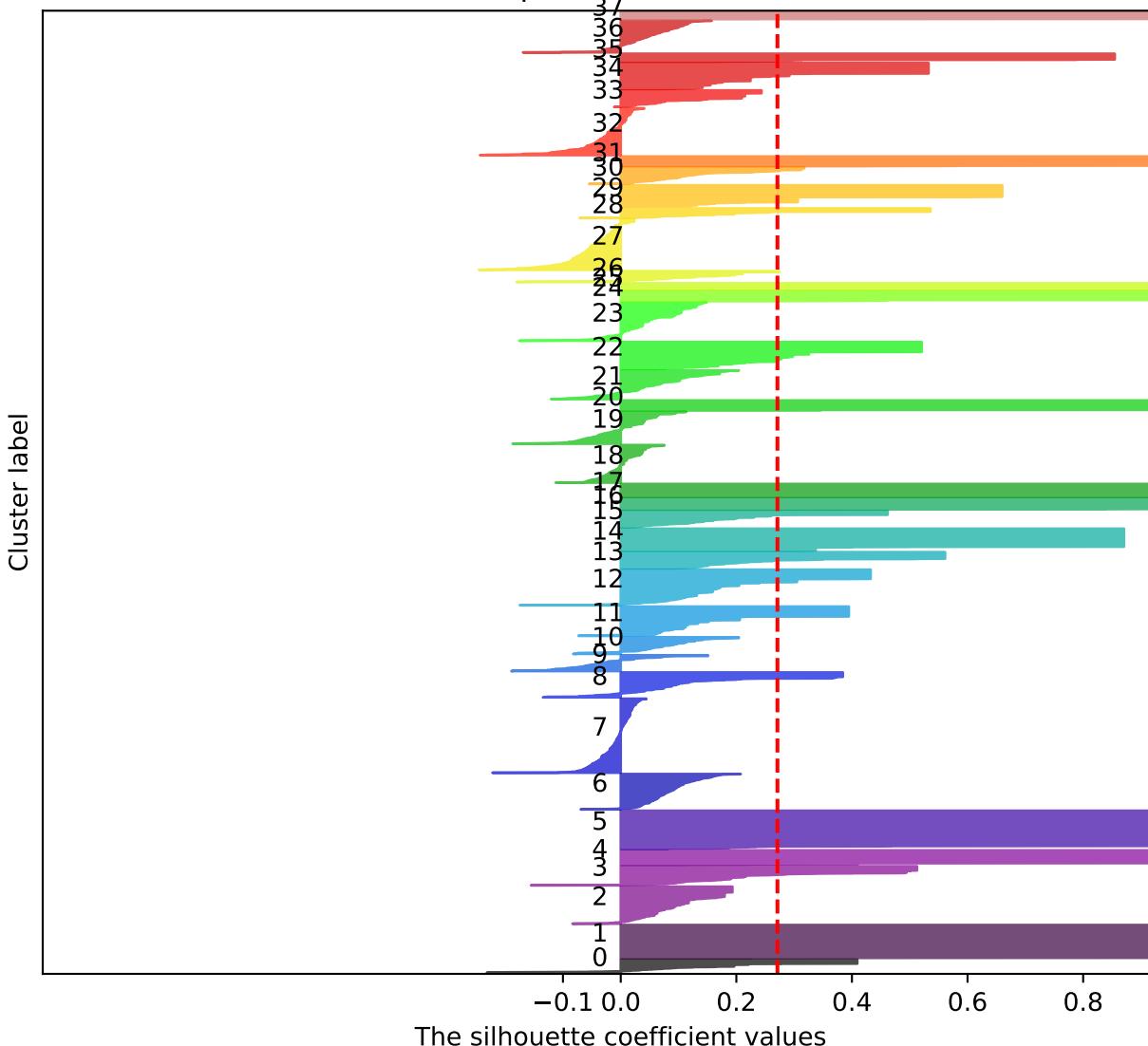


The visualization of the clustered data.

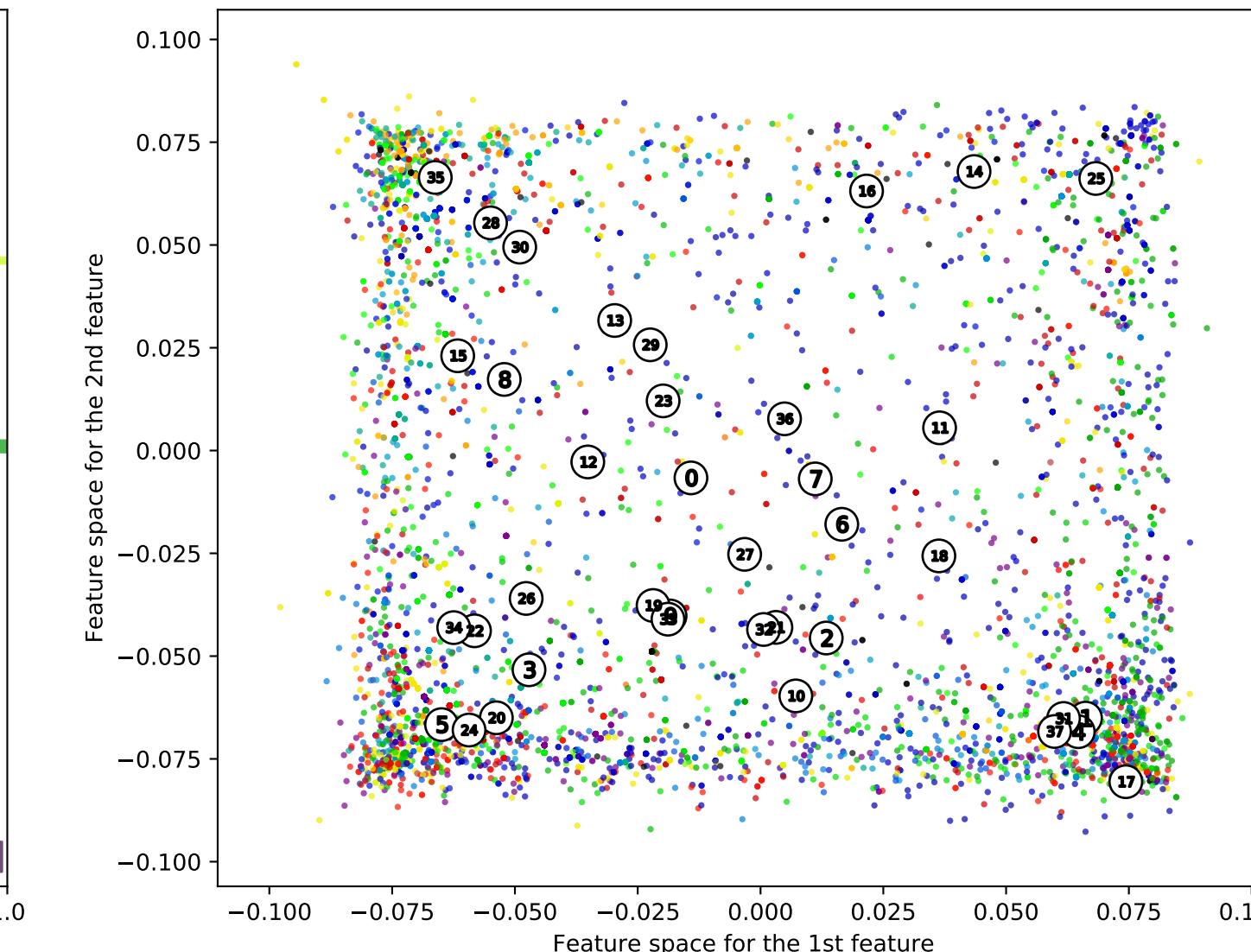


Silhouette analysis for KMeans clustering on sample data with n_clusters = 38 with Average Silhouette of: 0.2711254060268402

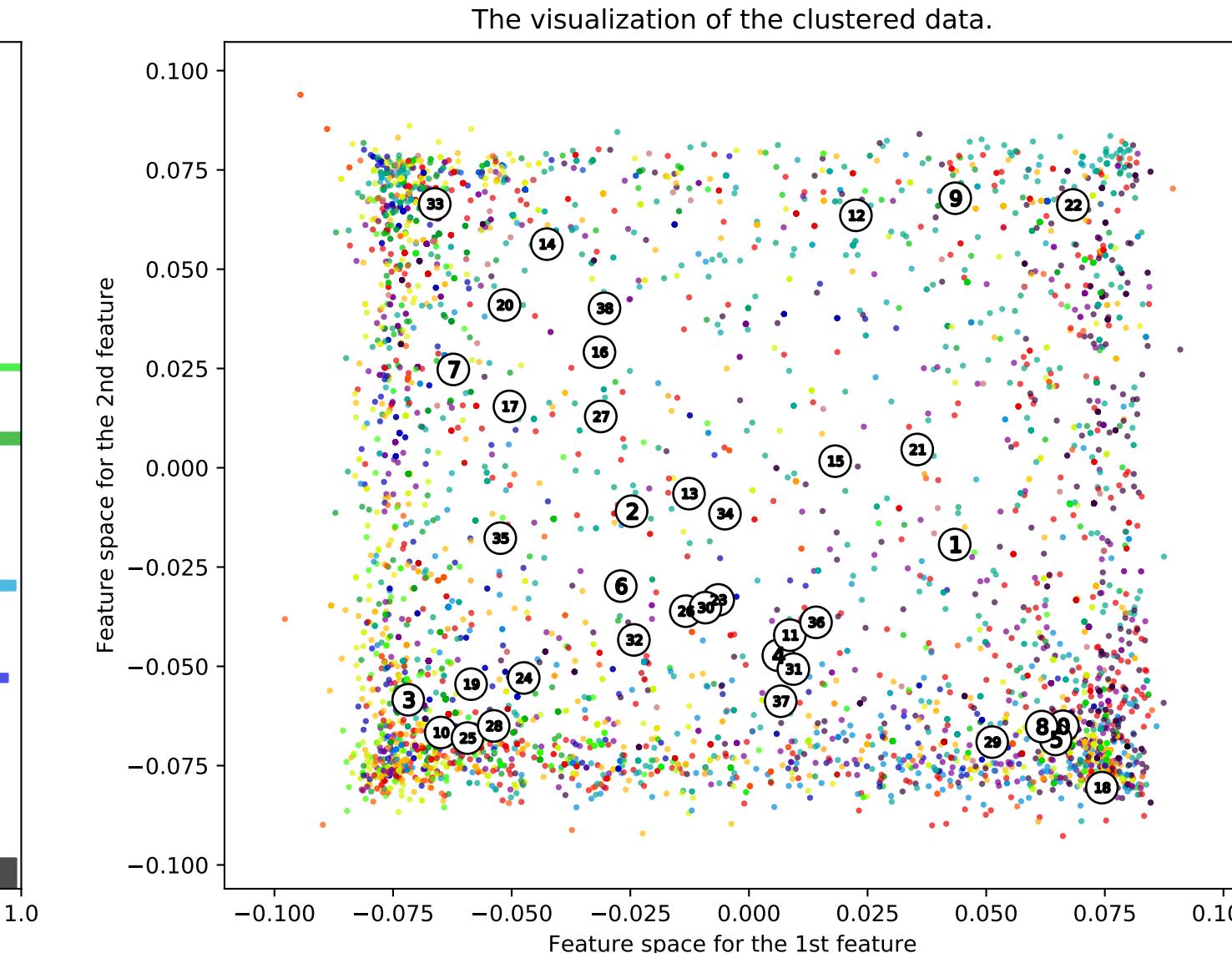
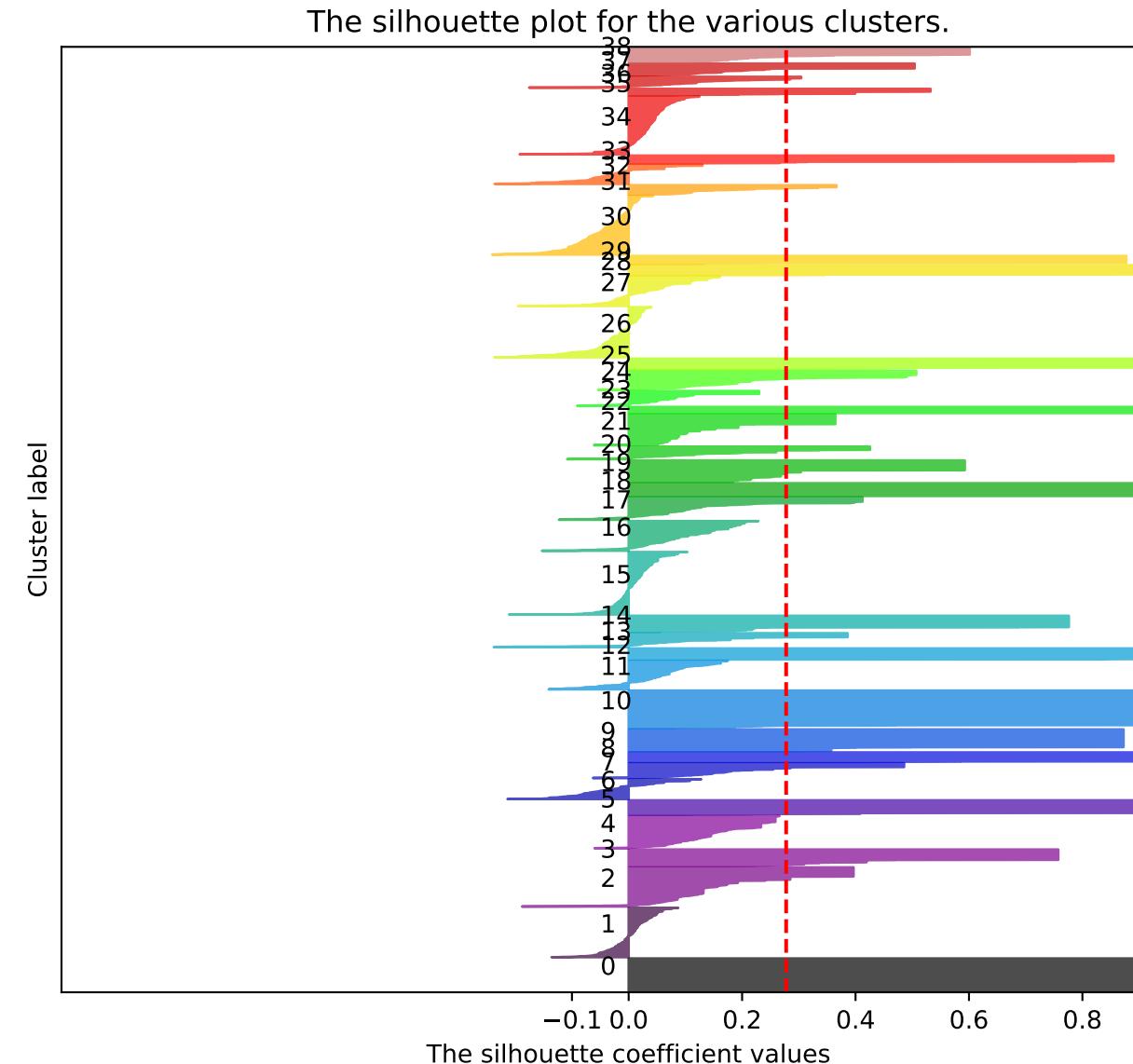
The silhouette plot for the various clusters.



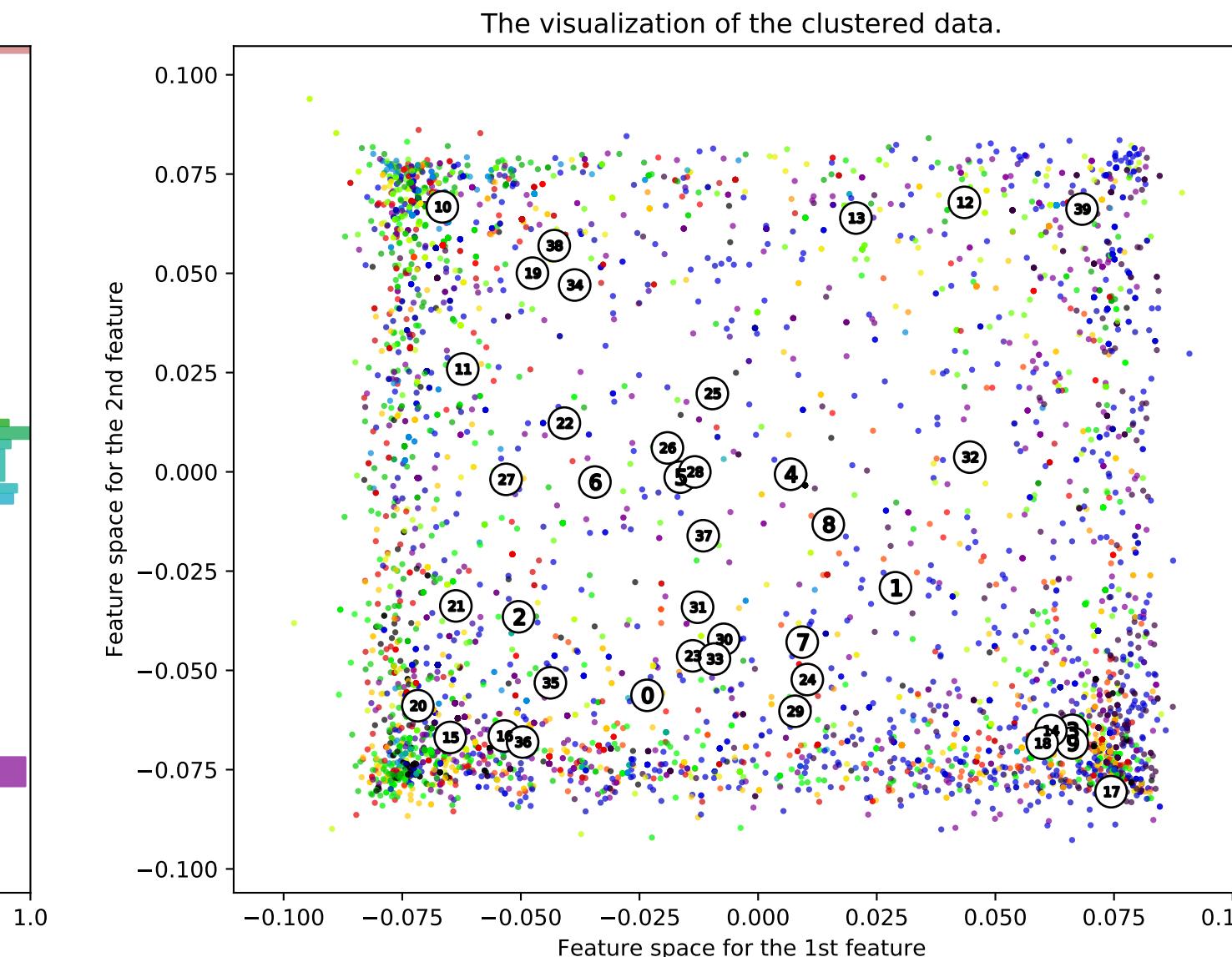
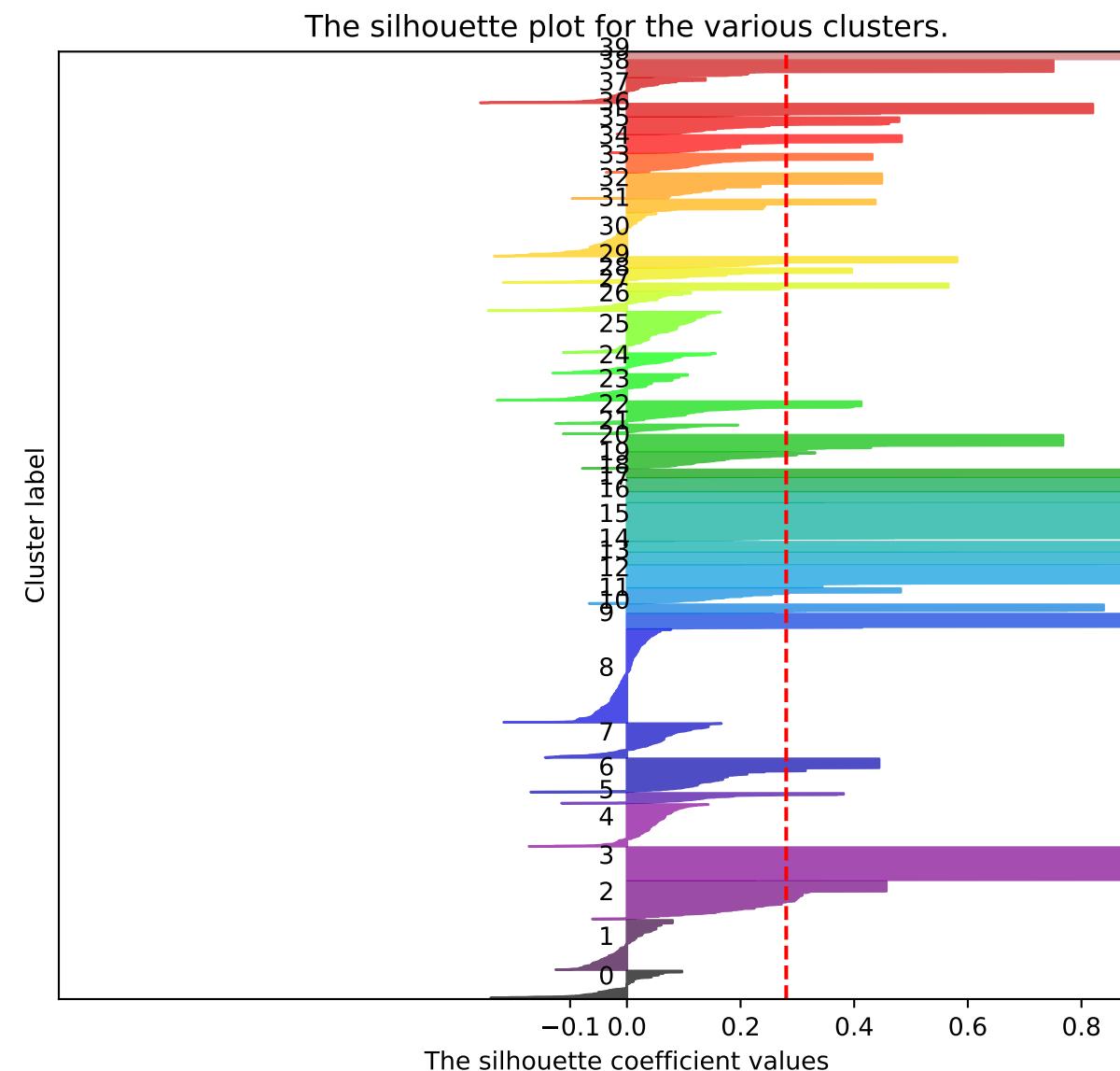
The visualization of the clustered data.



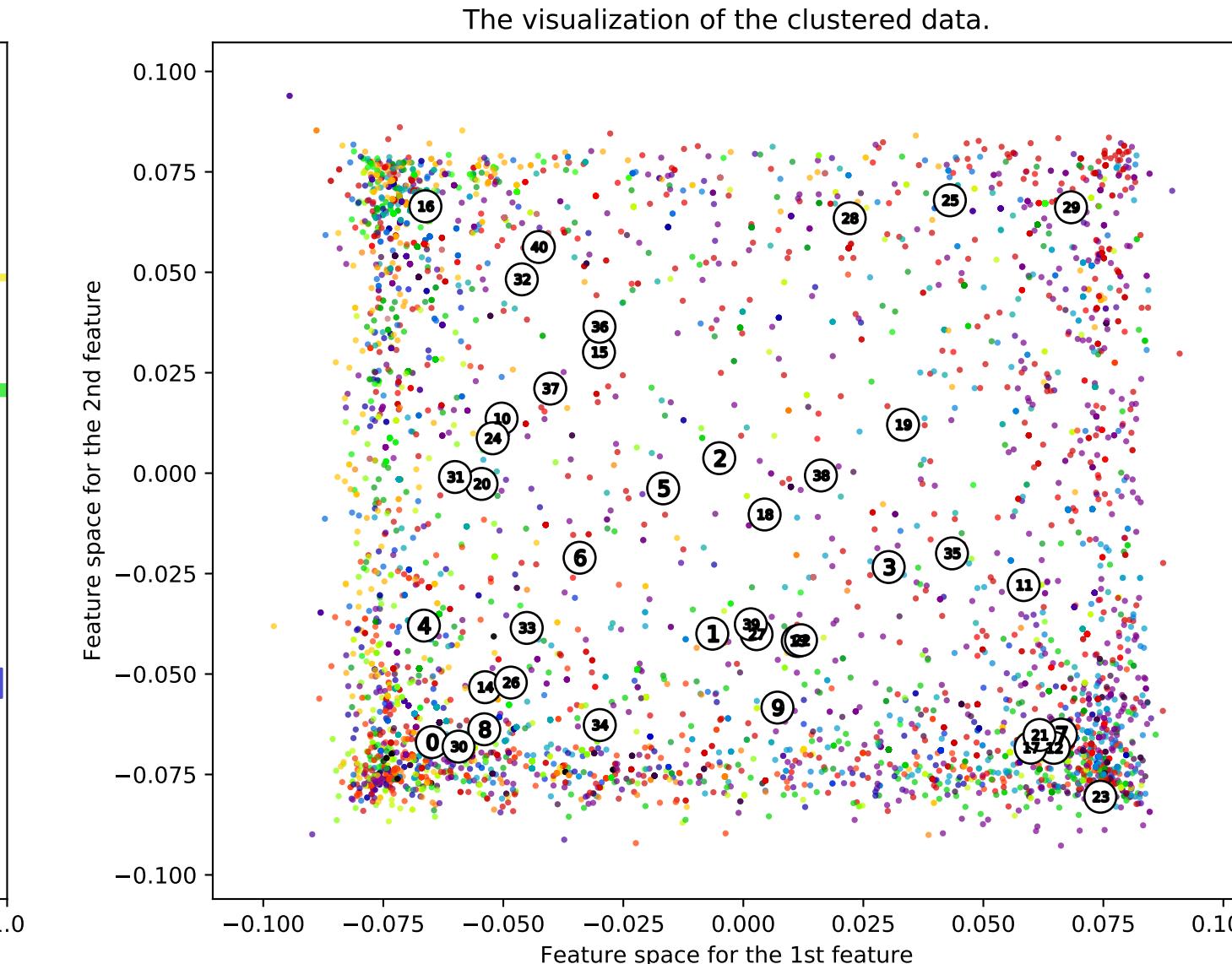
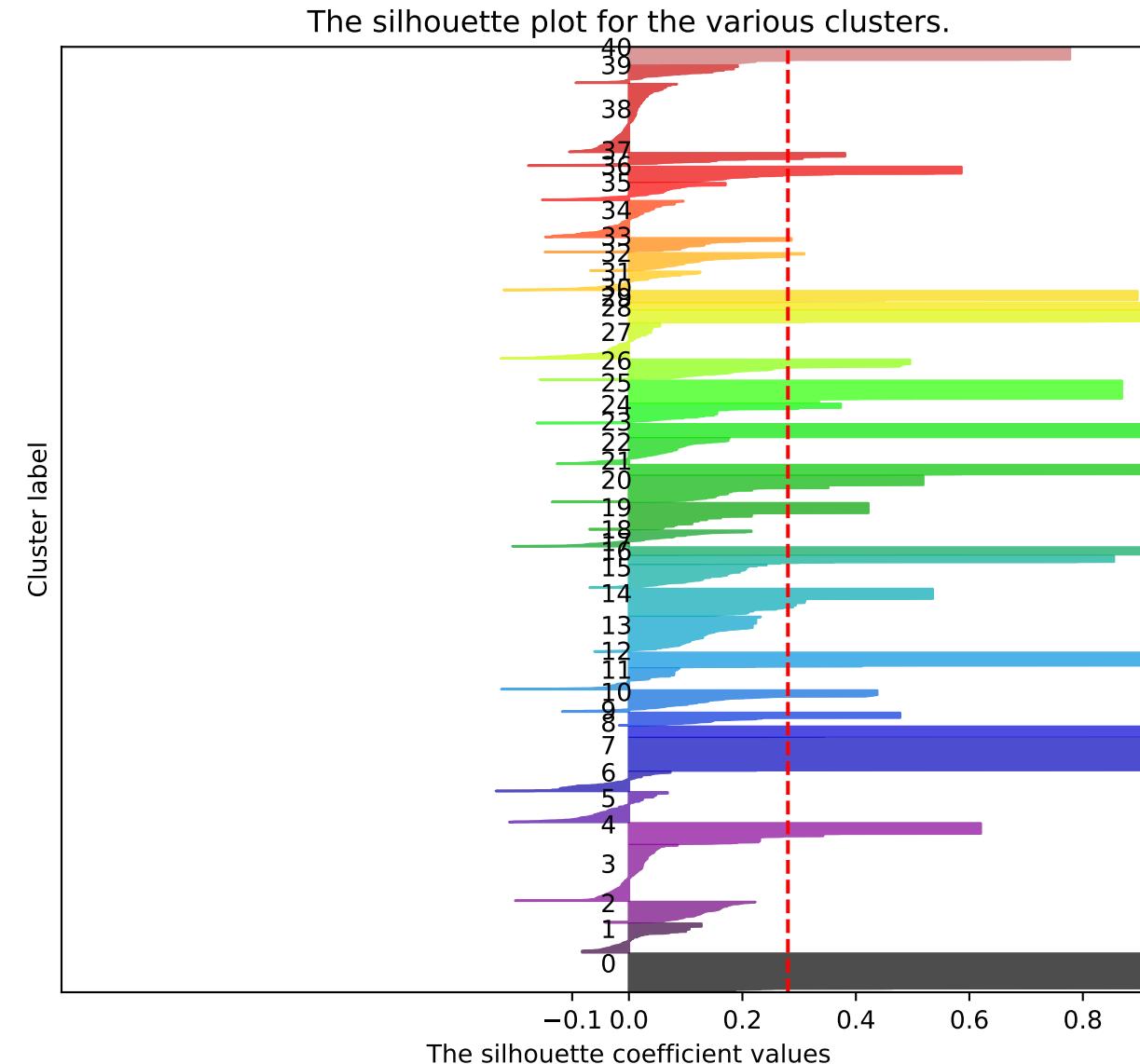
Silhouette analysis for KMeans clustering on sample data with n_clusters = 39 with Average Silhouette of: 0.27766937017440796



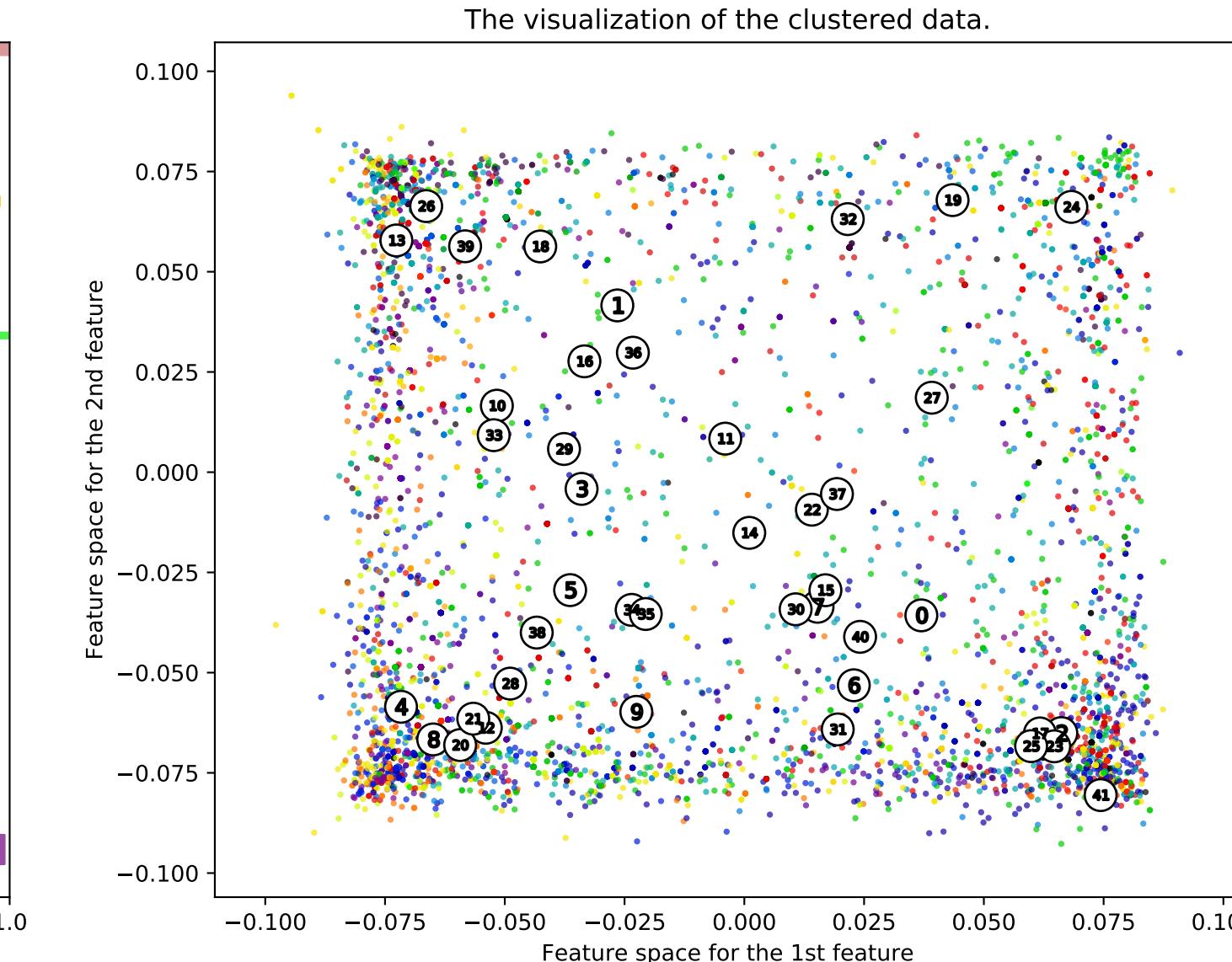
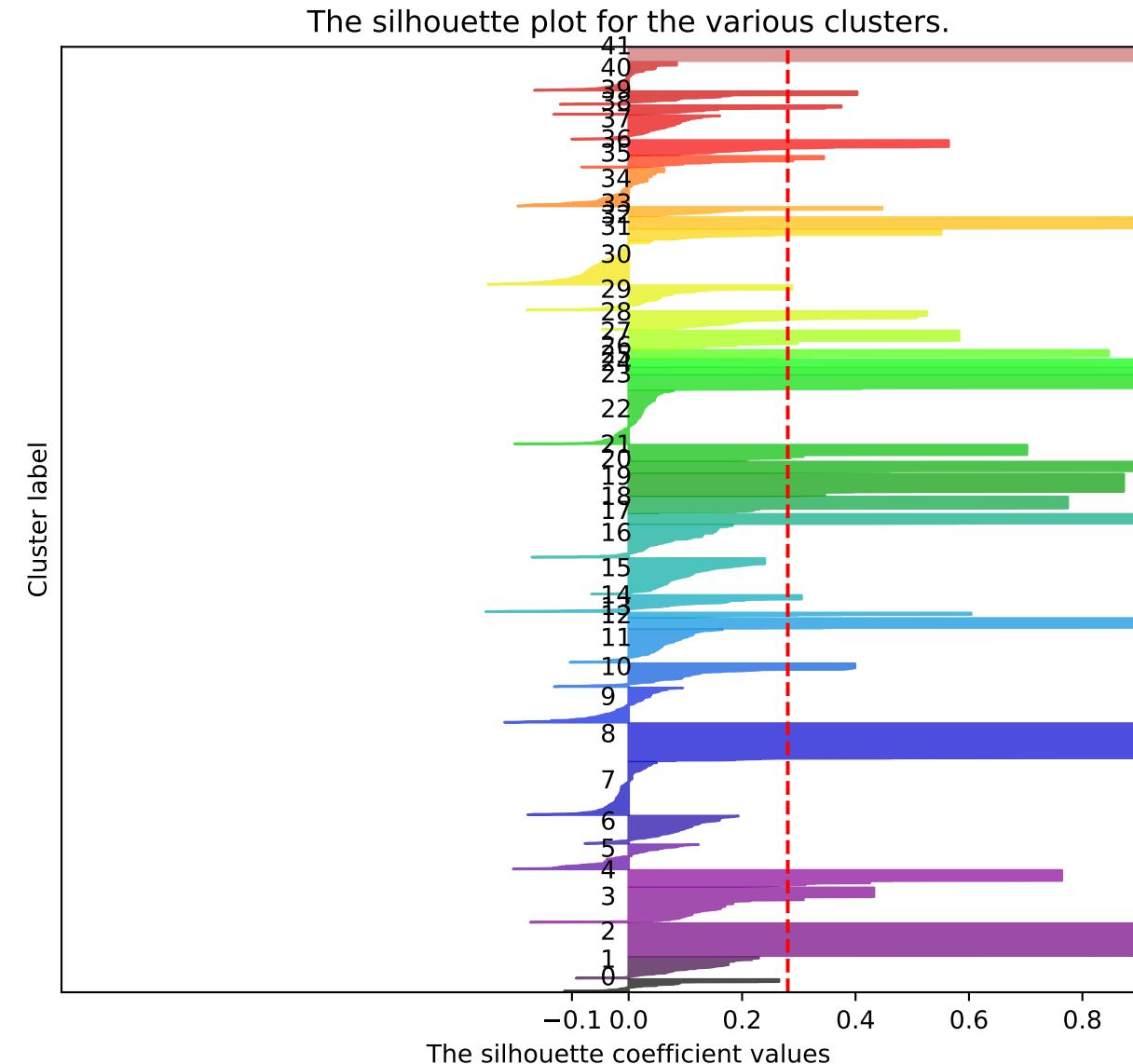
Silhouette analysis for KMeans clustering on sample data with n_clusters = 40 with Average Silhouette of: 0.280356228351593



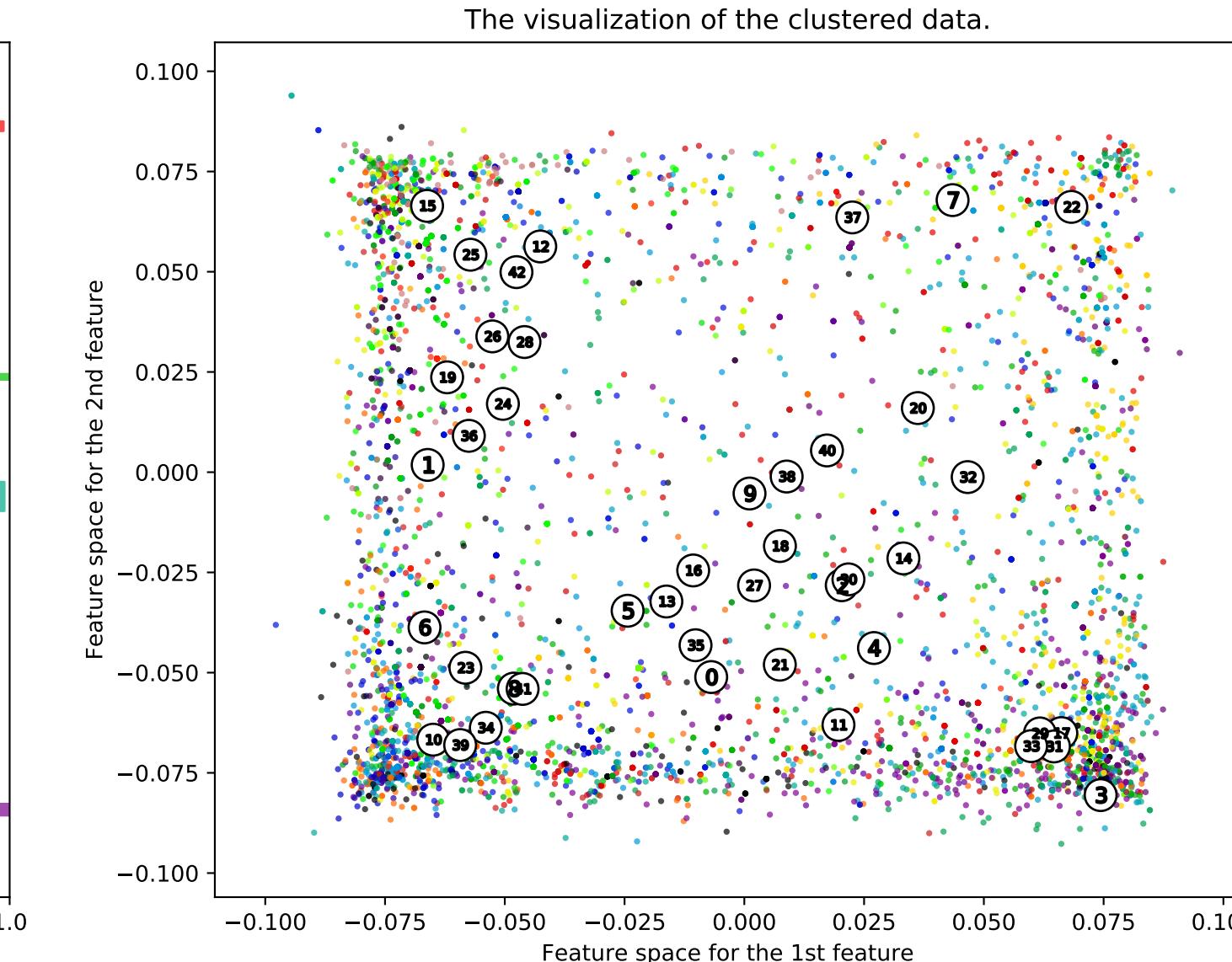
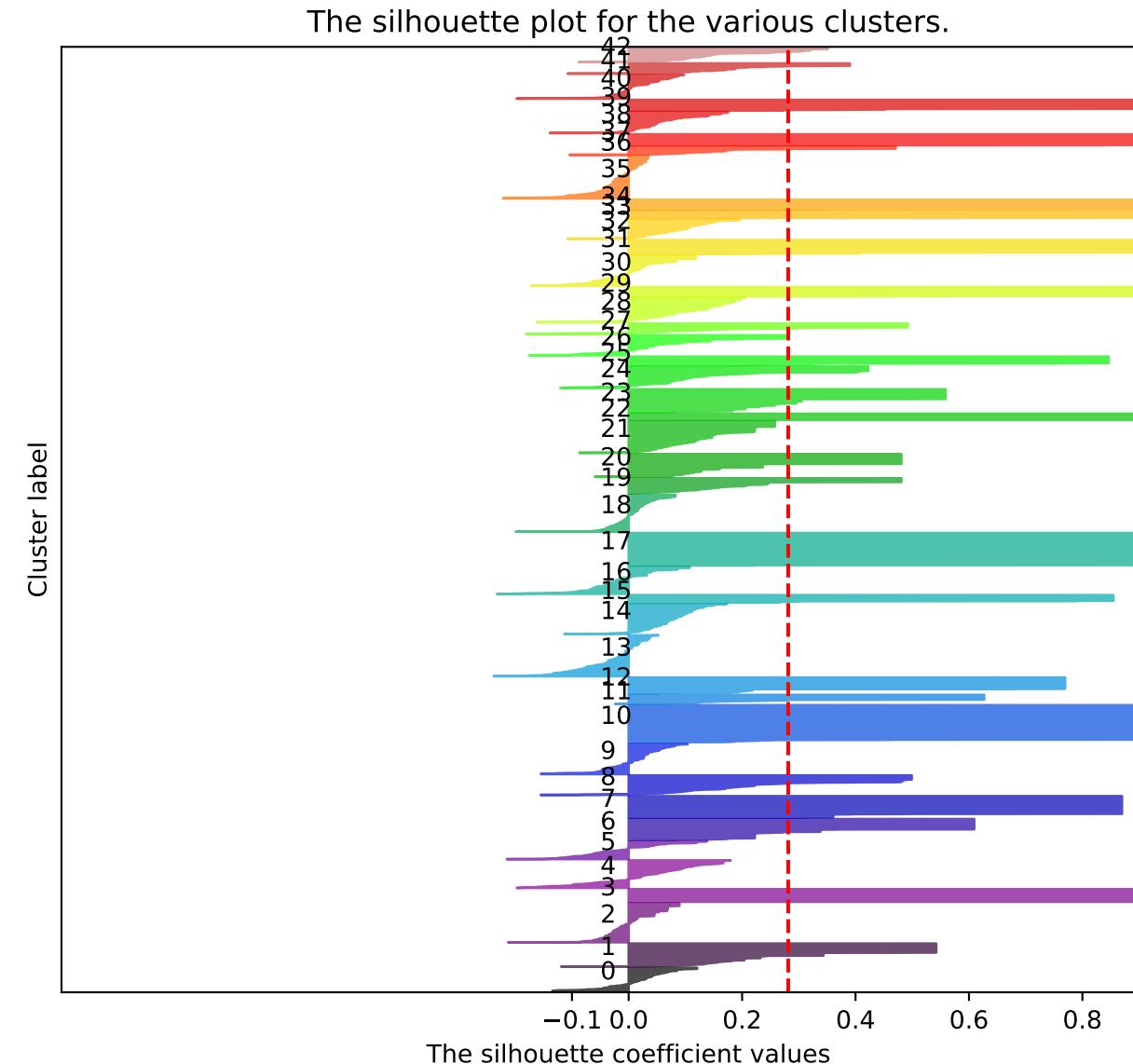
Silhouette analysis for KMeans clustering on sample data with n_clusters = 41 with Average Silhouette of: 0.28018268942832947



Silhouette analysis for KMeans clustering on sample data with n_clusters = 42 with Average Silhouette of: 0.28052273392677307

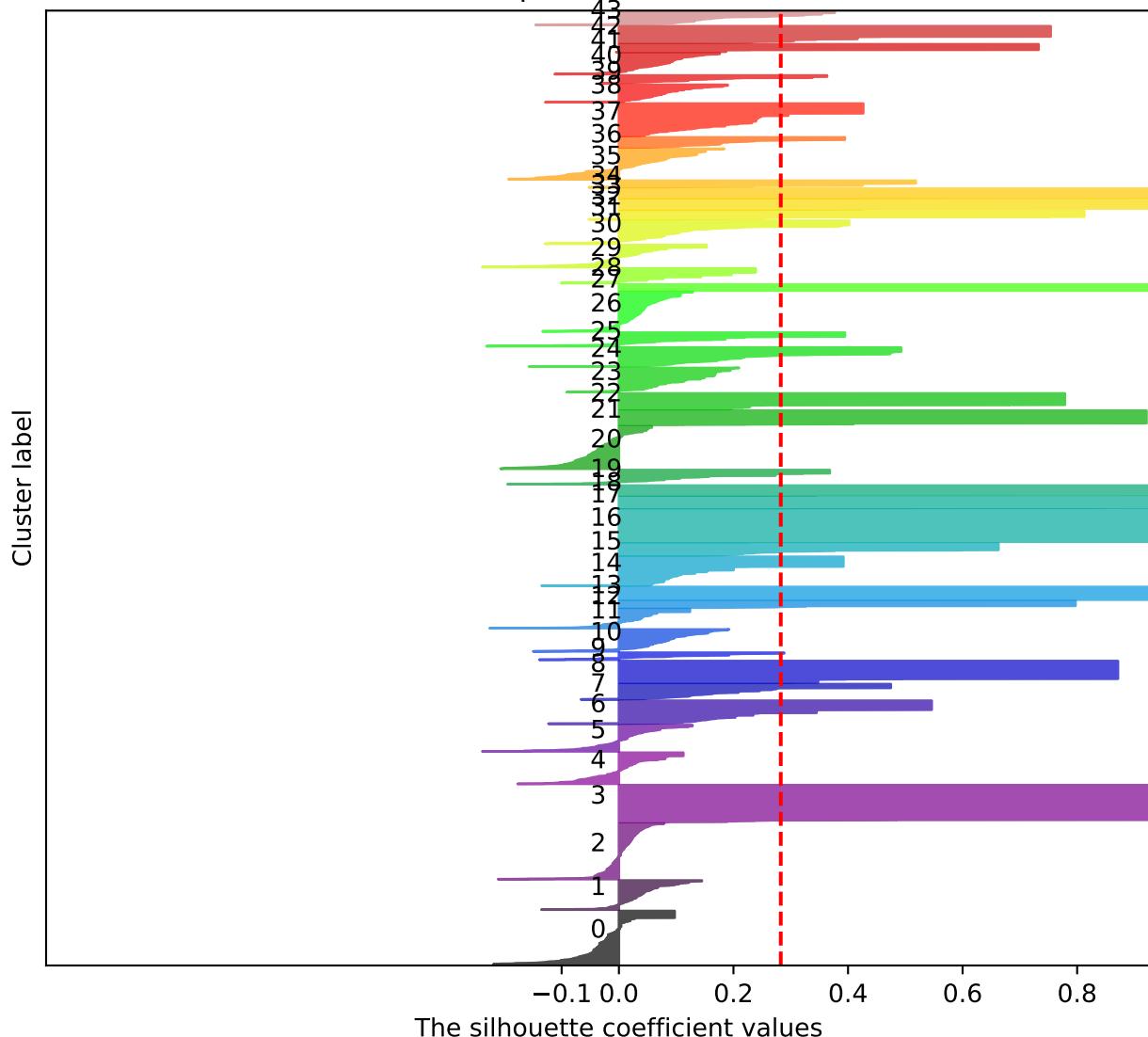


Silhouette analysis for KMeans clustering on sample data with n_clusters = 43 with Average Silhouette of: 0.28128495812416077

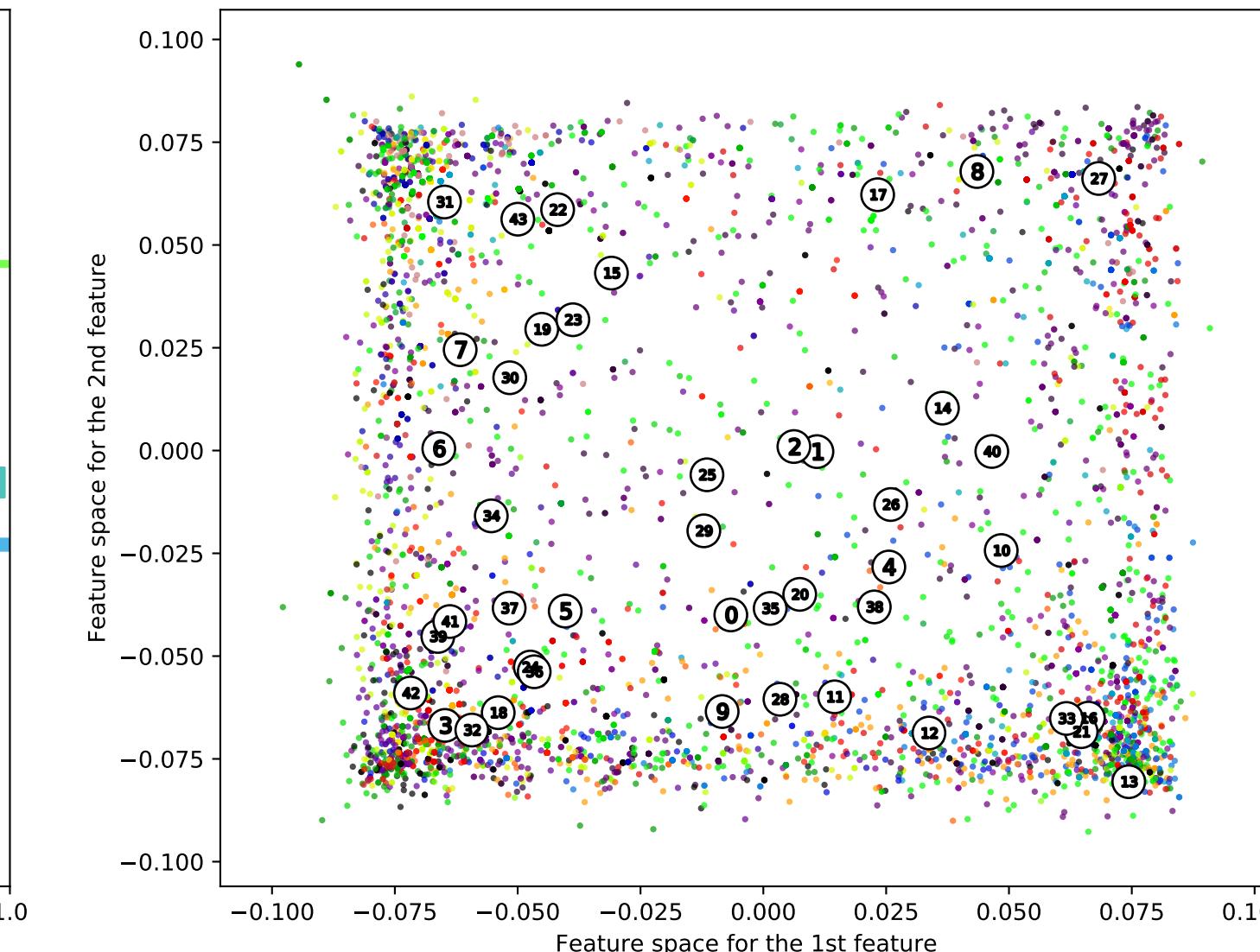


Silhouette analysis for KMeans clustering on sample data with n_clusters = 44 with Average Silhouette of: 0.28256791830062866

The silhouette plot for the various clusters.

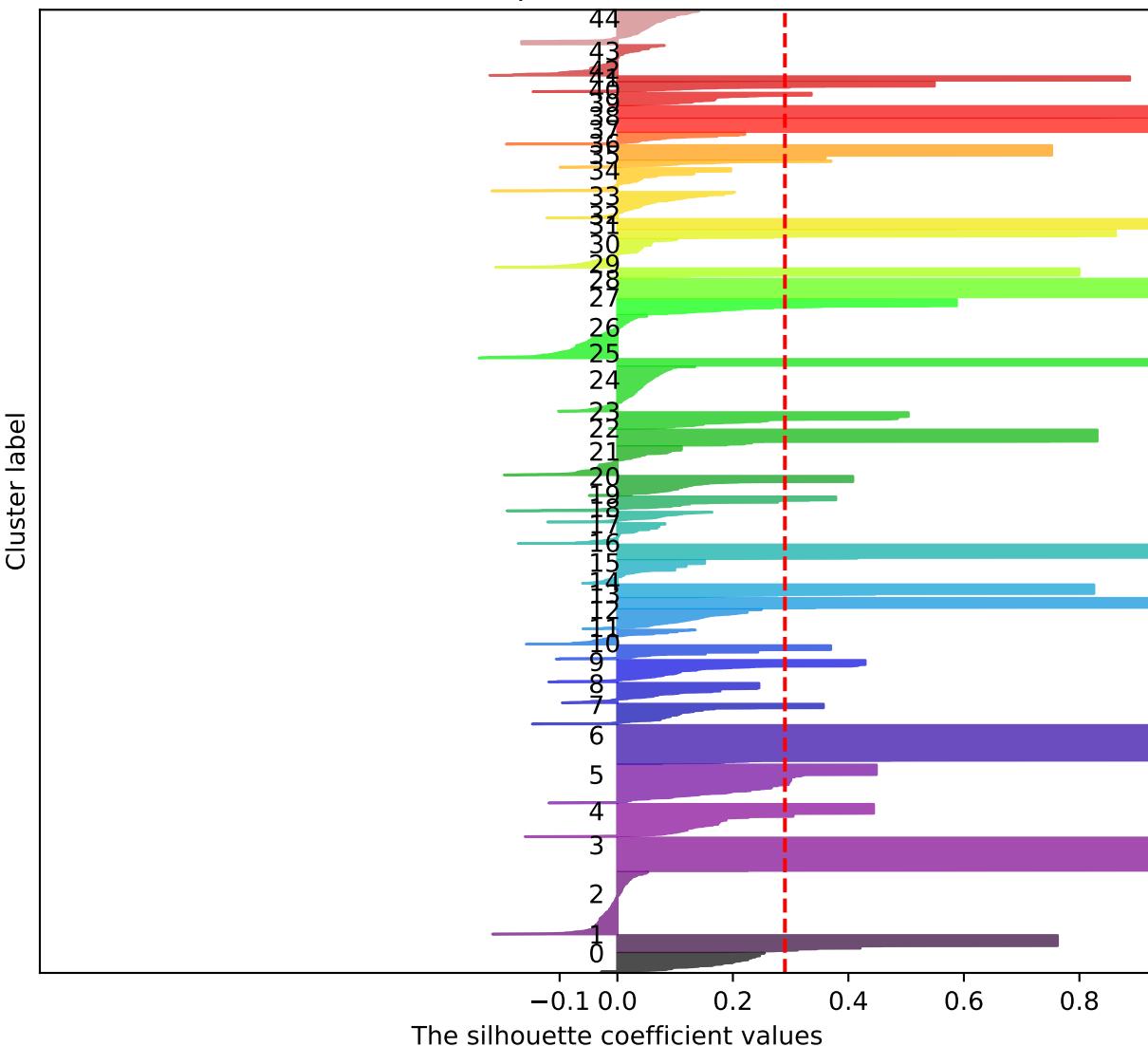


The visualization of the clustered data.

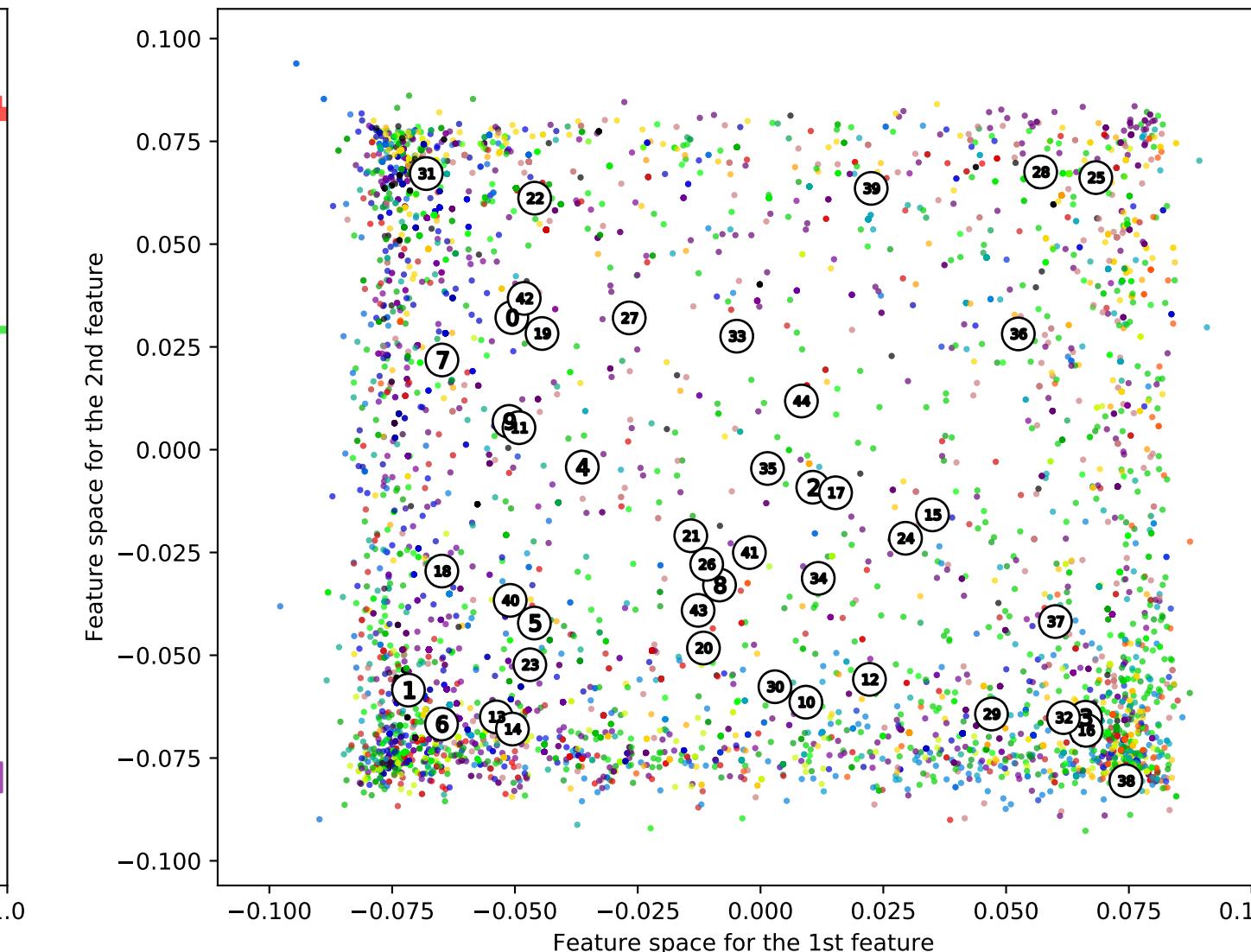


Silhouette analysis for KMeans clustering on sample data with n_clusters = 45 with Average Silhouette of: 0.29007163643836975

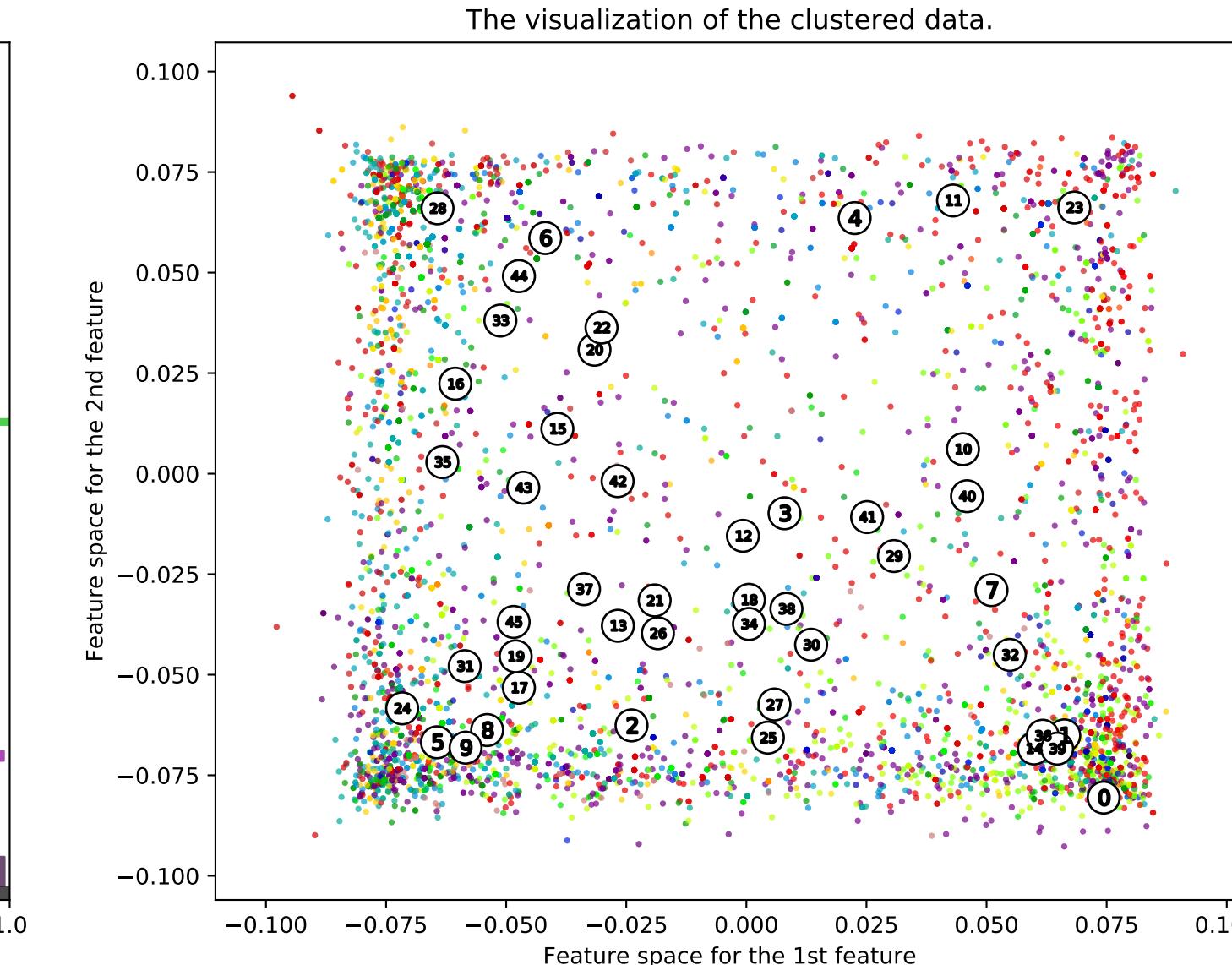
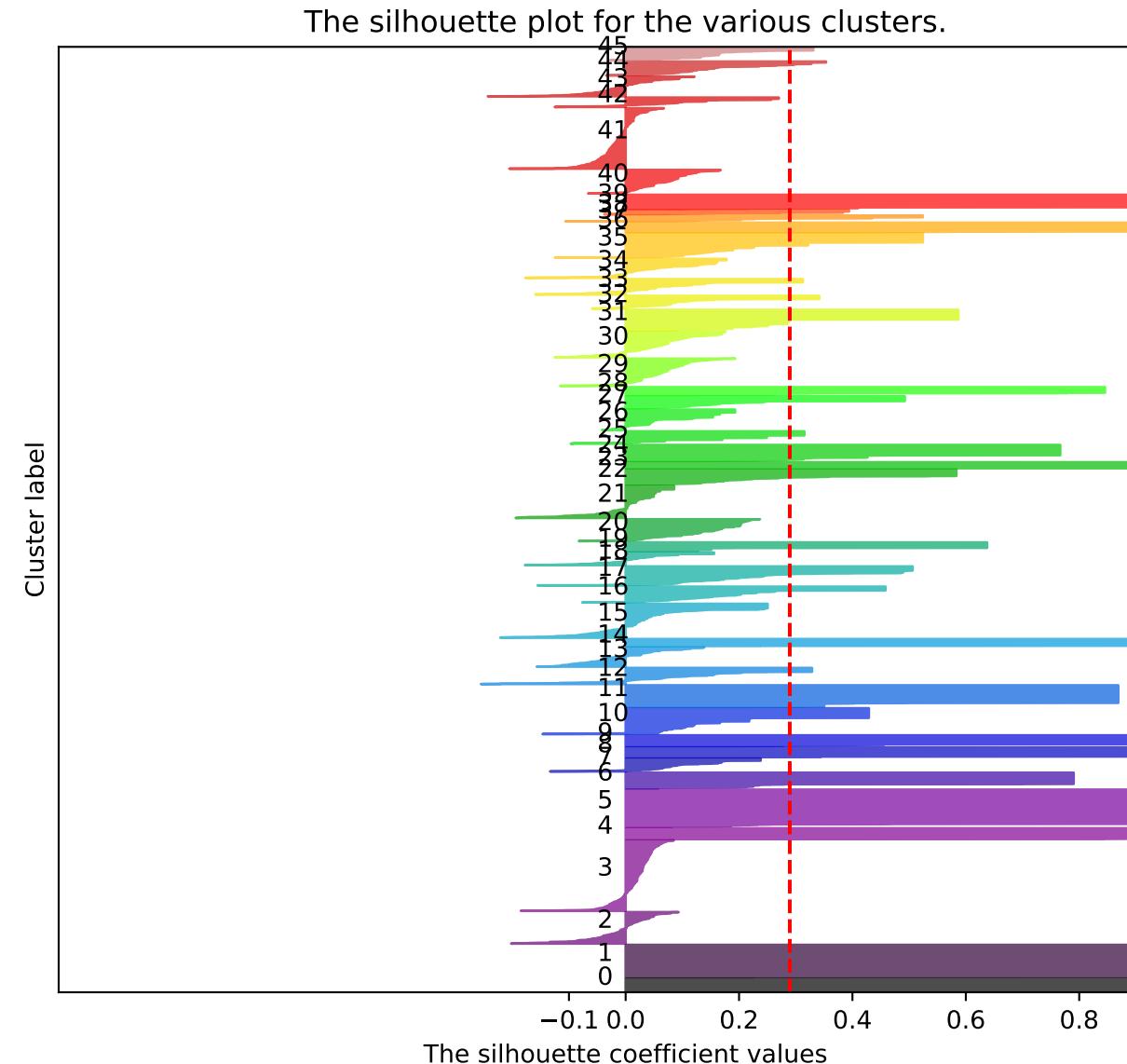
The silhouette plot for the various clusters.



The visualization of the clustered data.

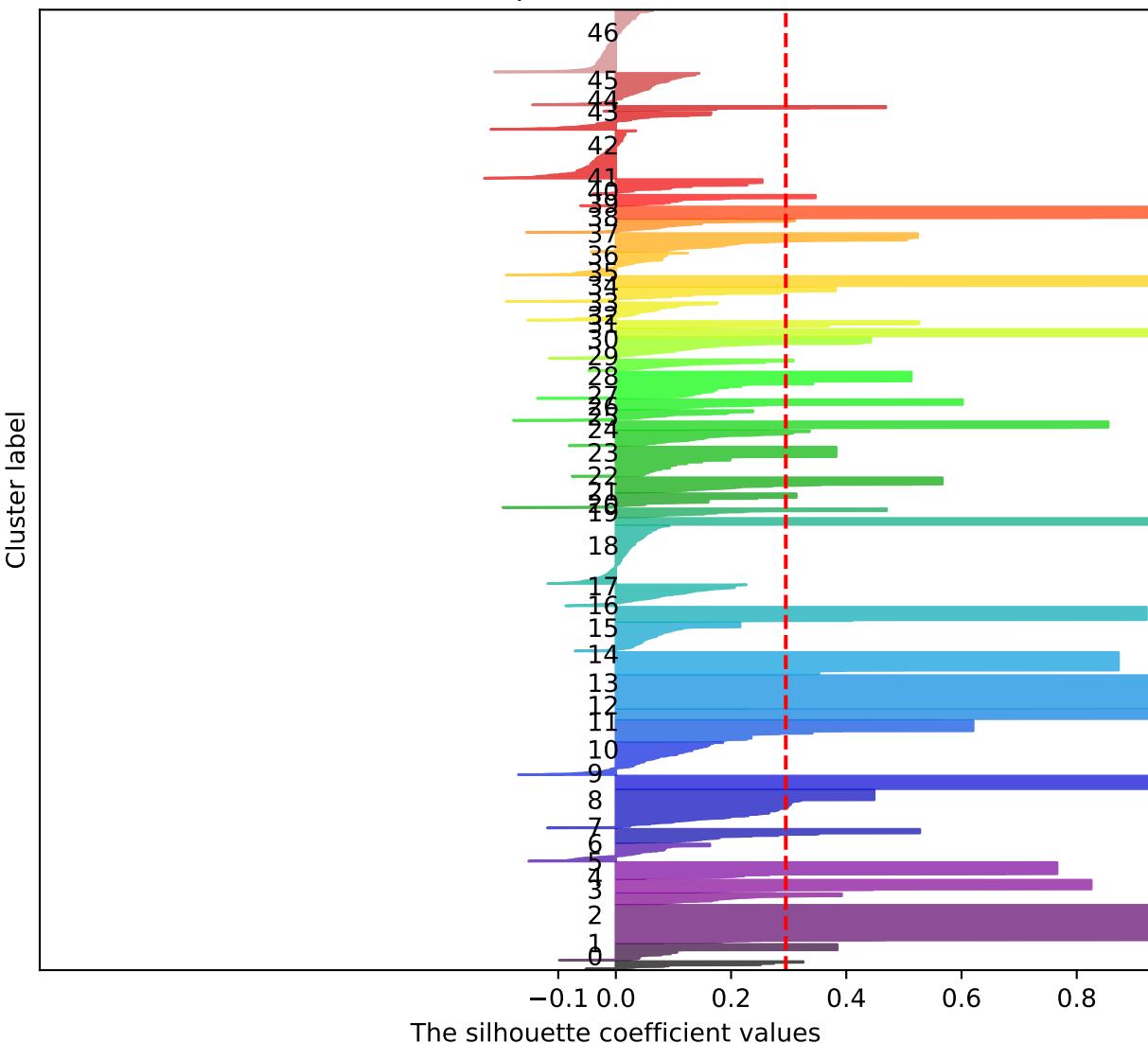


Silhouette analysis for KMeans clustering on sample data with n_clusters = 46 with Average Silhouette of: 0.2894785404205322

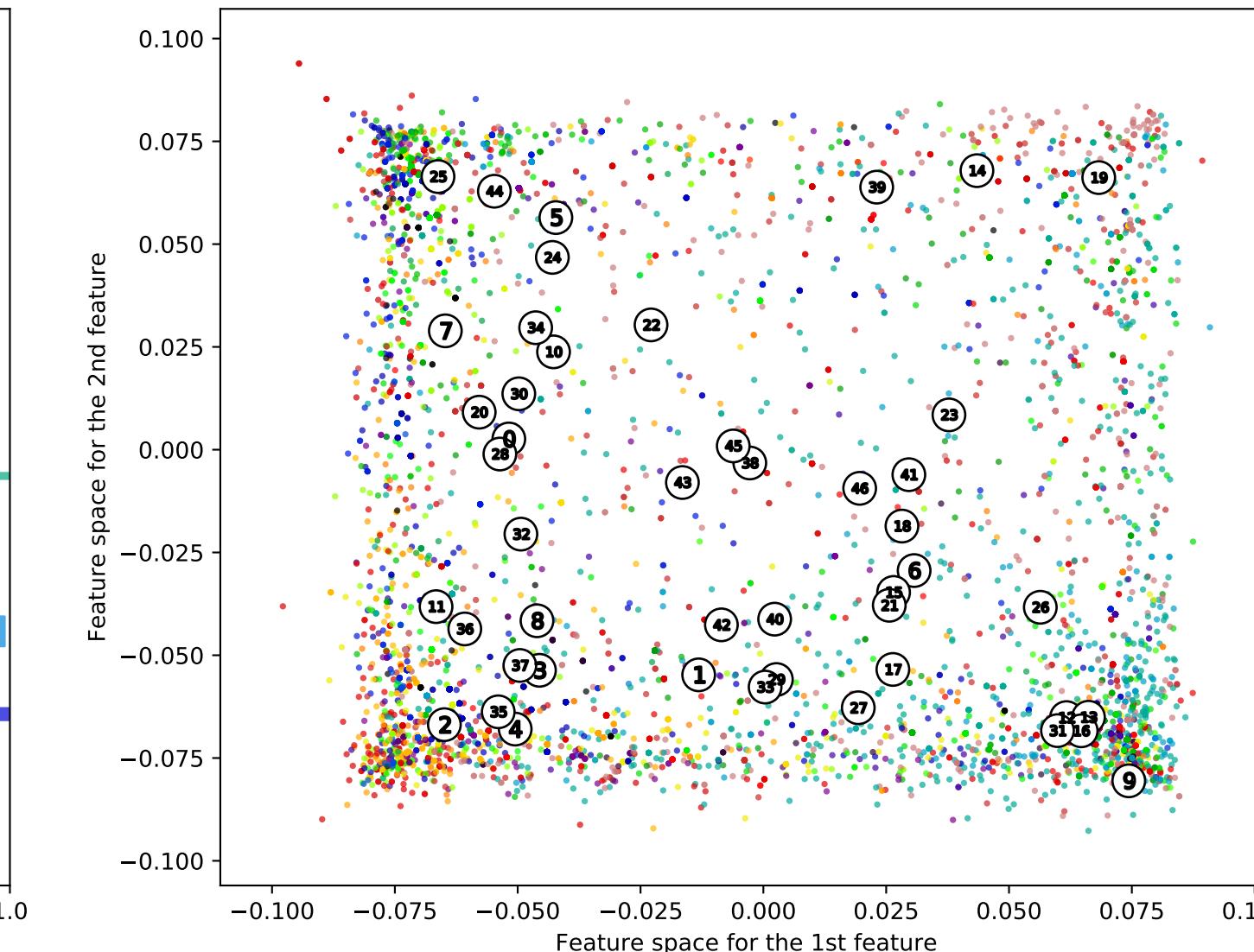


Silhouette analysis for KMeans clustering on sample data with n_clusters = 47 with Average Silhouette of: 0.29502084851264954

The silhouette plot for the various clusters.

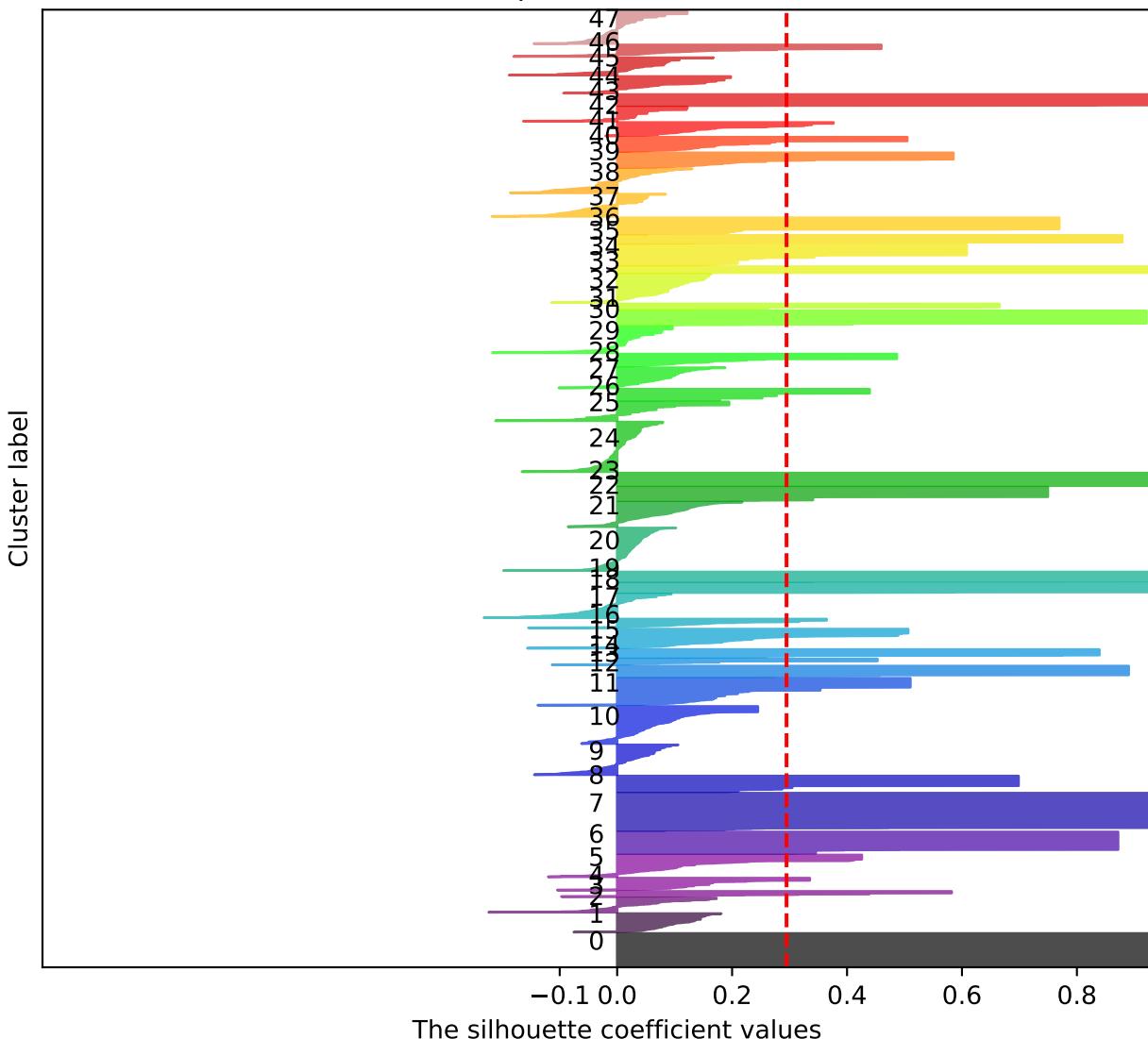


The visualization of the clustered data.

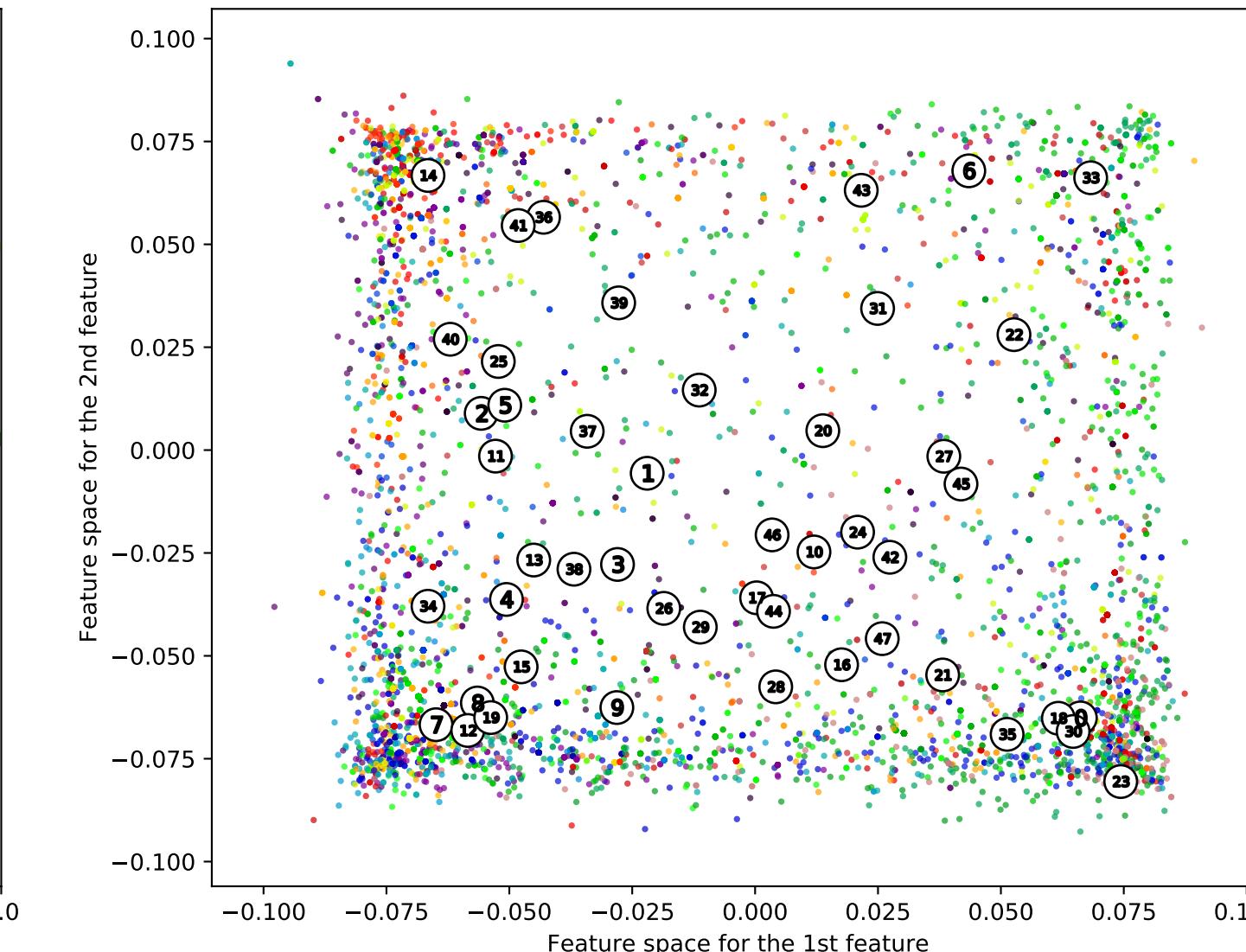


Silhouette analysis for KMeans clustering on sample data with n_clusters = 48 with Average Silhouette of: 0.2946920394897461

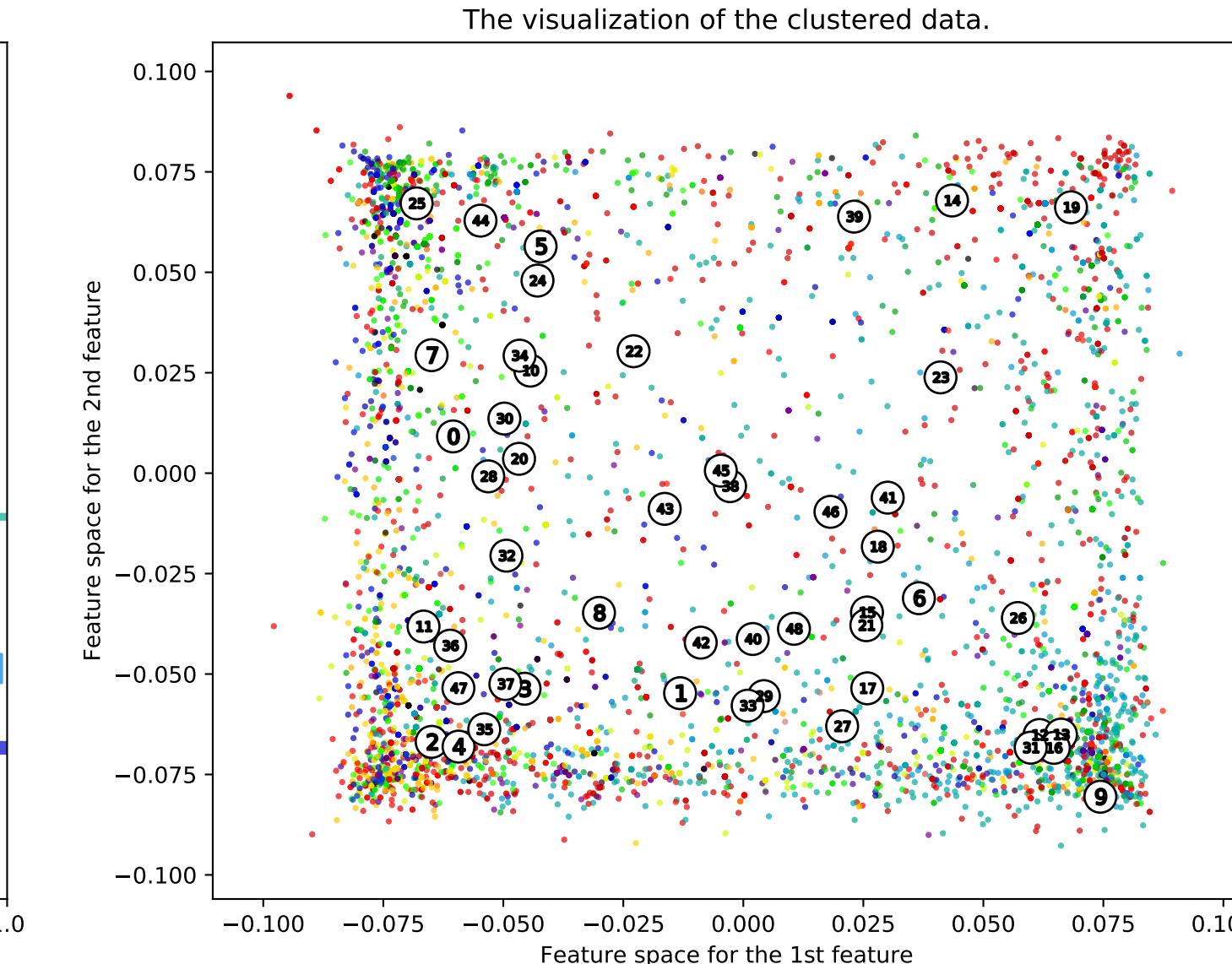
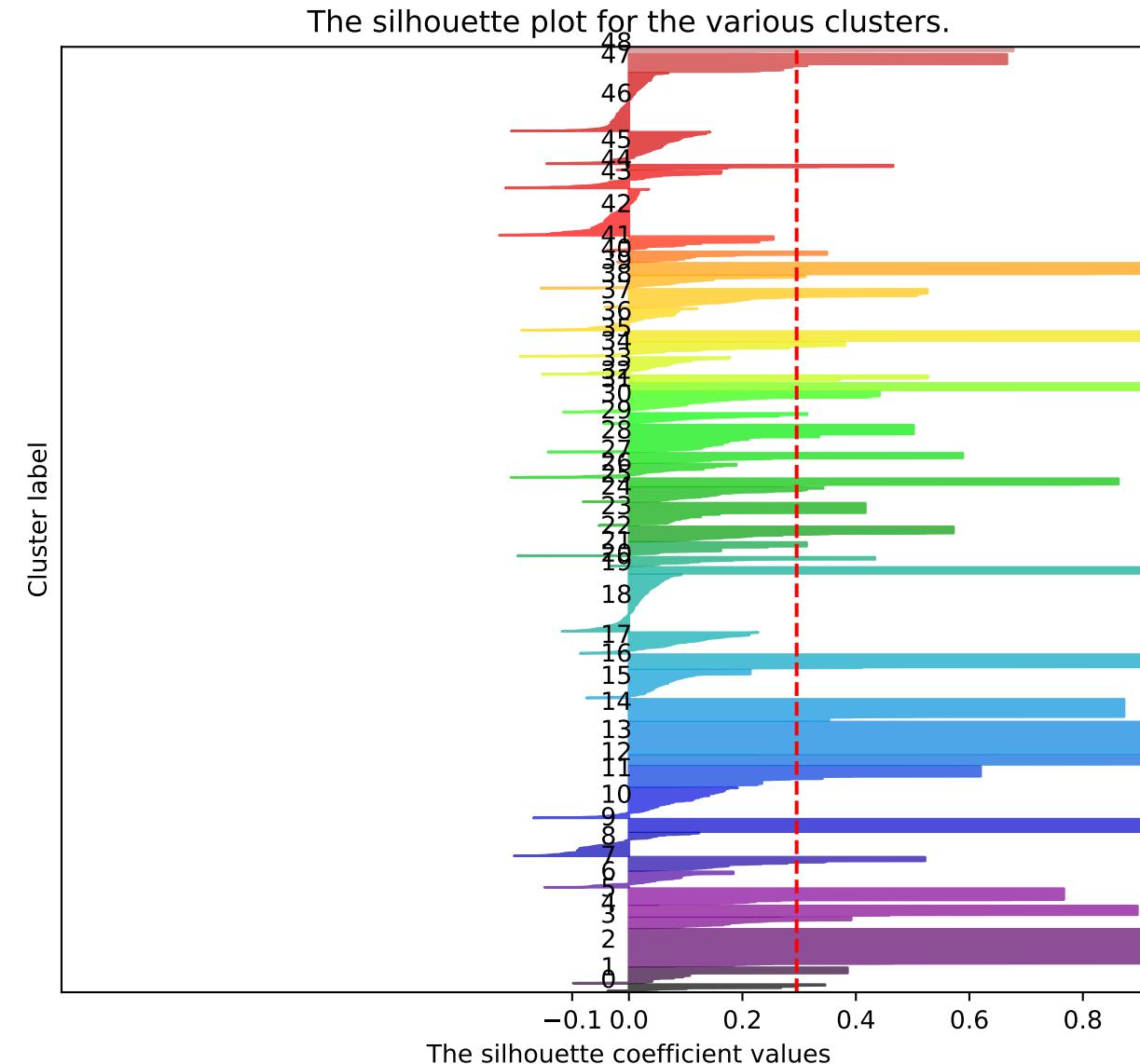
The silhouette plot for the various clusters.



The visualization of the clustered data.

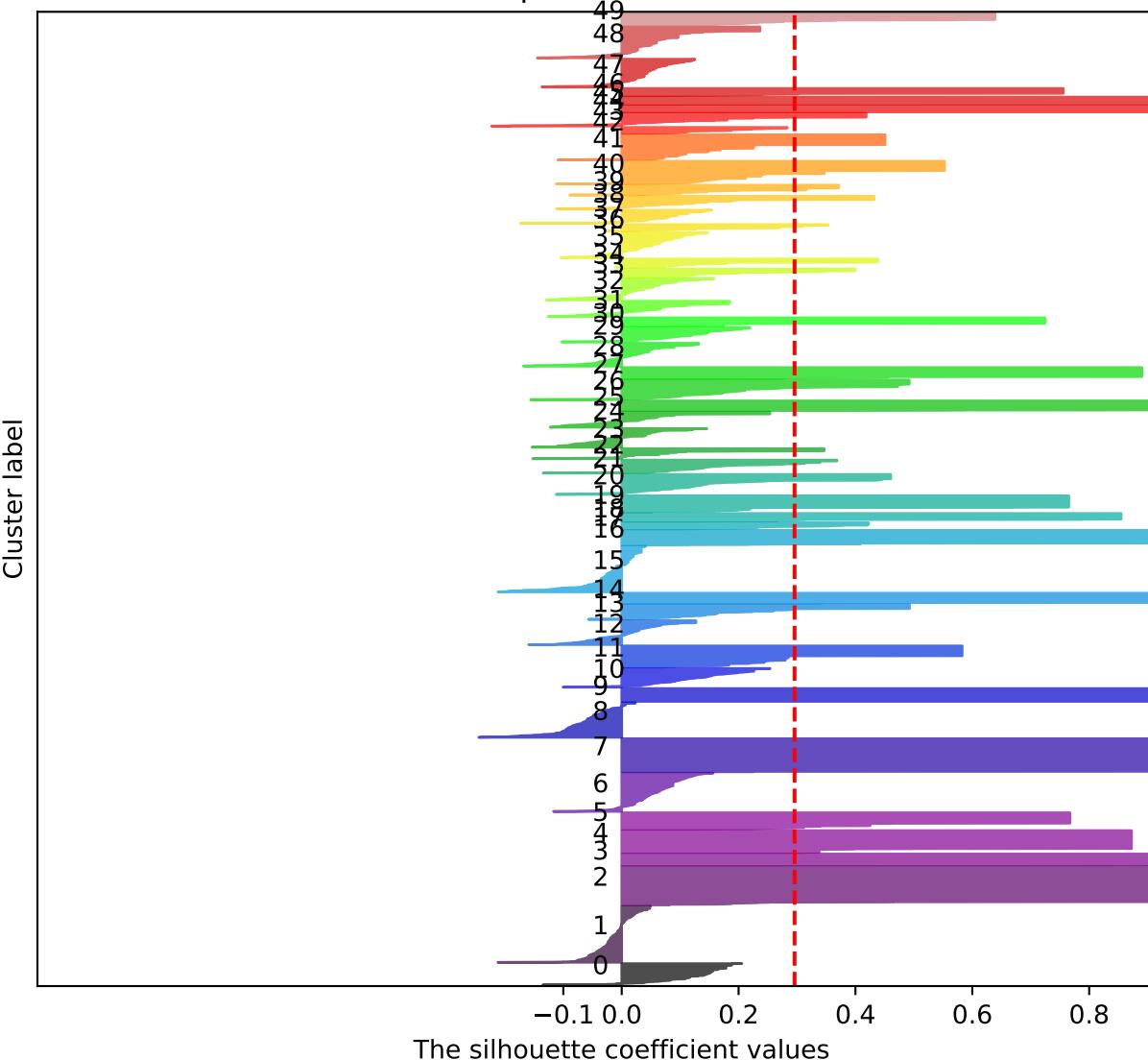


Silhouette analysis for KMeans clustering on sample data with n_clusters = 49 with Average Silhouette of: 0.29562902450561523

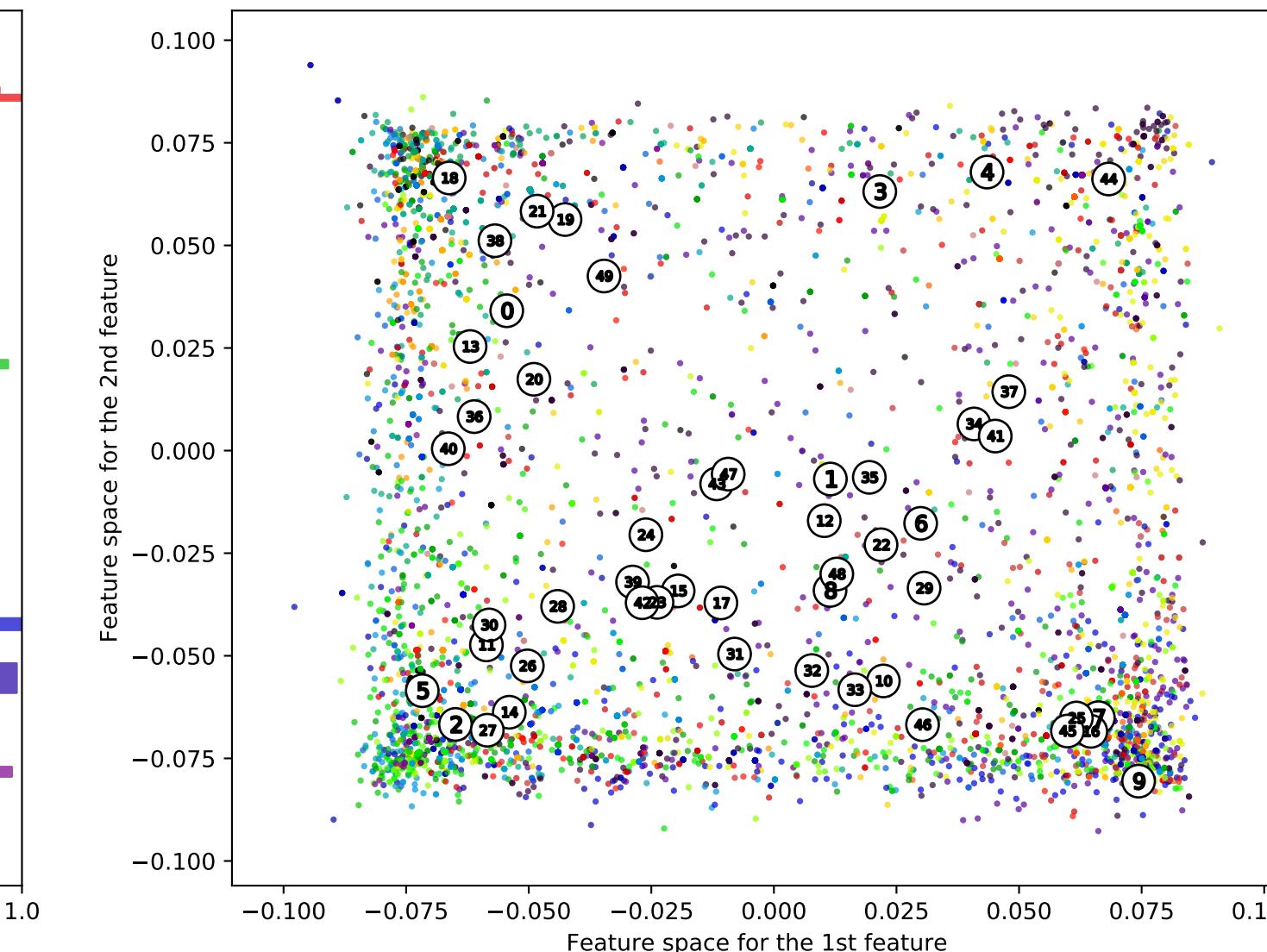


Silhouette analysis for KMeans clustering on sample data with n_clusters = 50 with Average Silhouette of: 0.29581108689308167

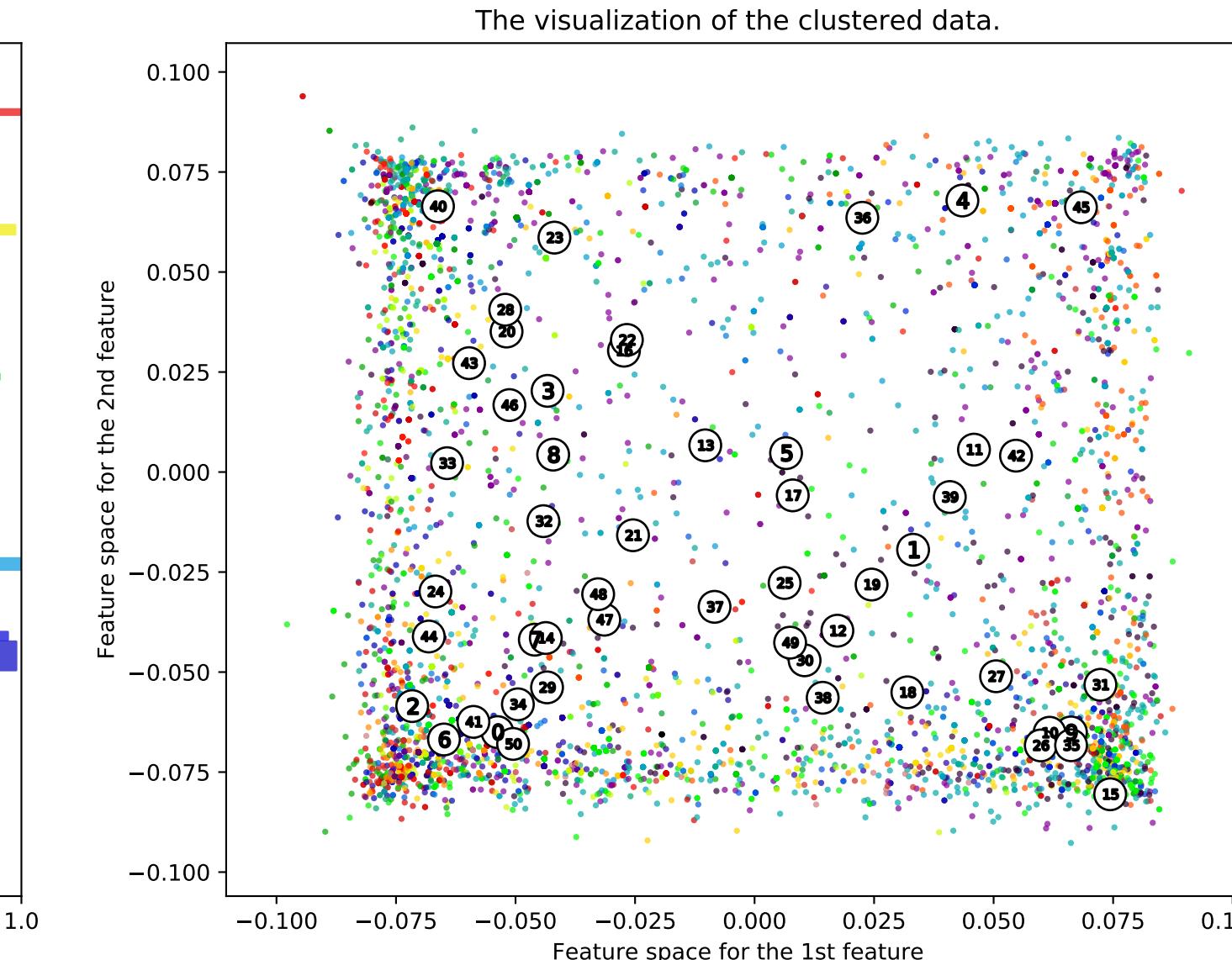
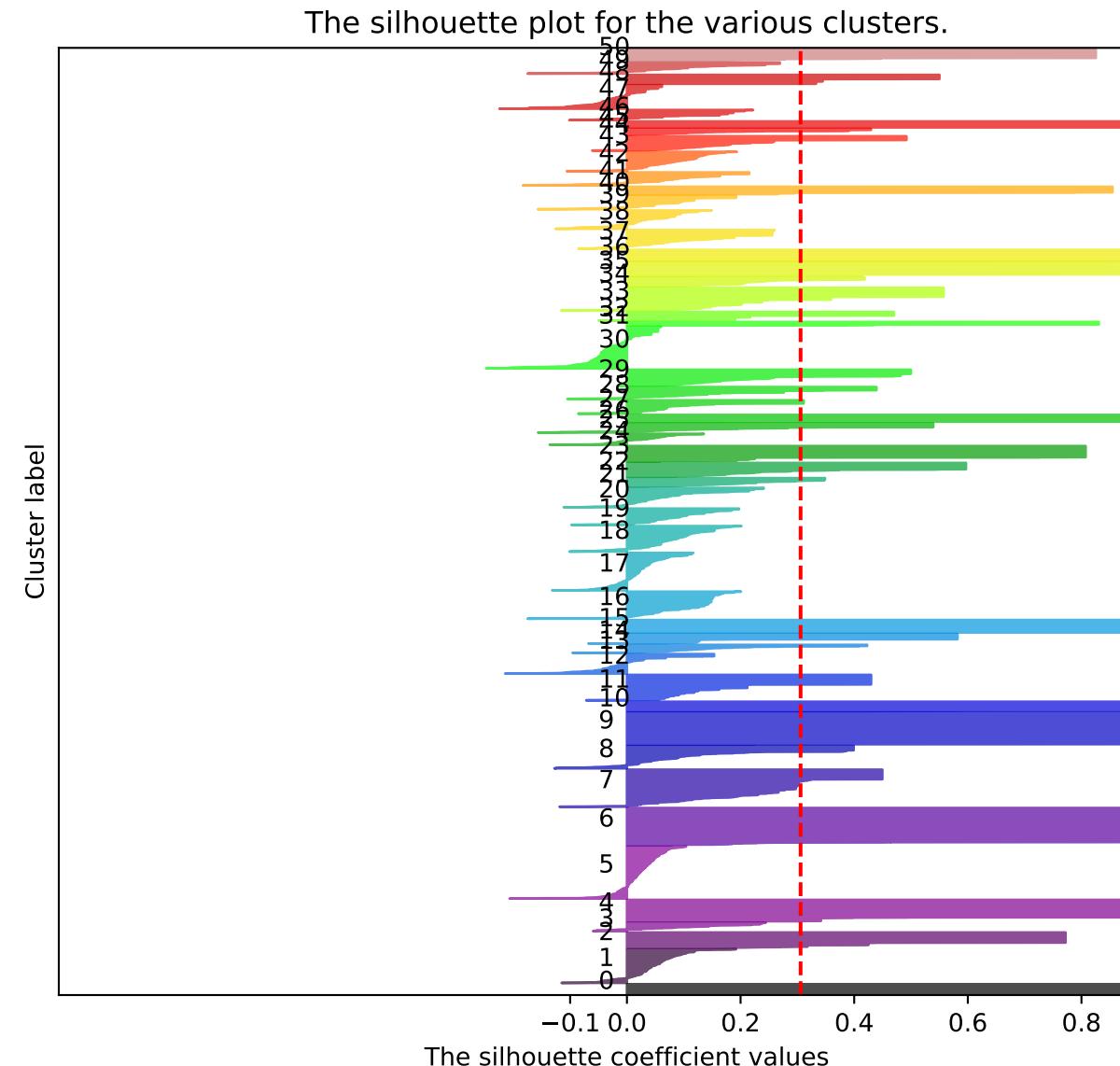
The silhouette plot for the various clusters



The visualization of the clustered data

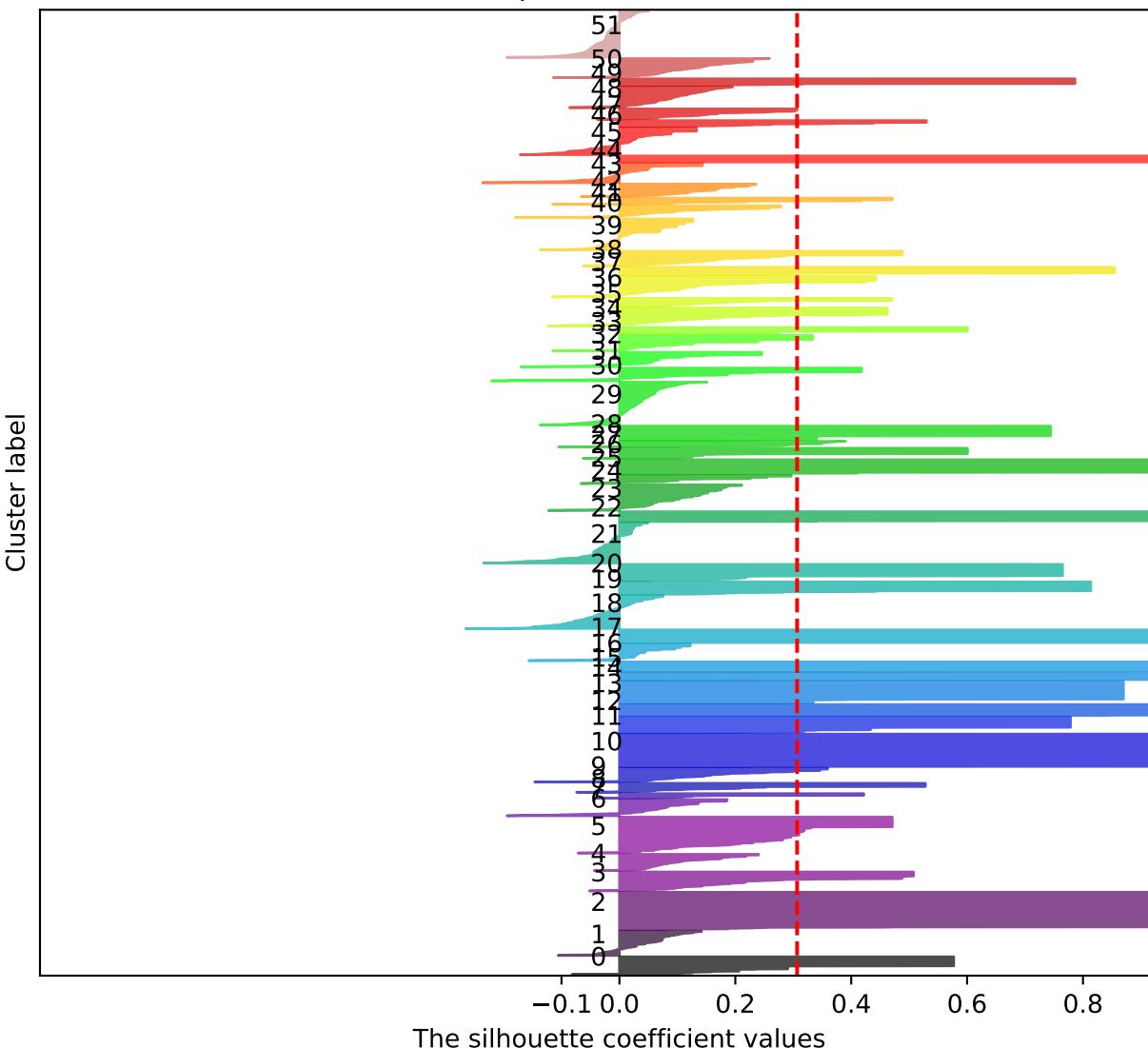


Silhouette analysis for KMeans clustering on sample data with n_clusters = 51 with Average Silhouette of: 0.3056361675262451

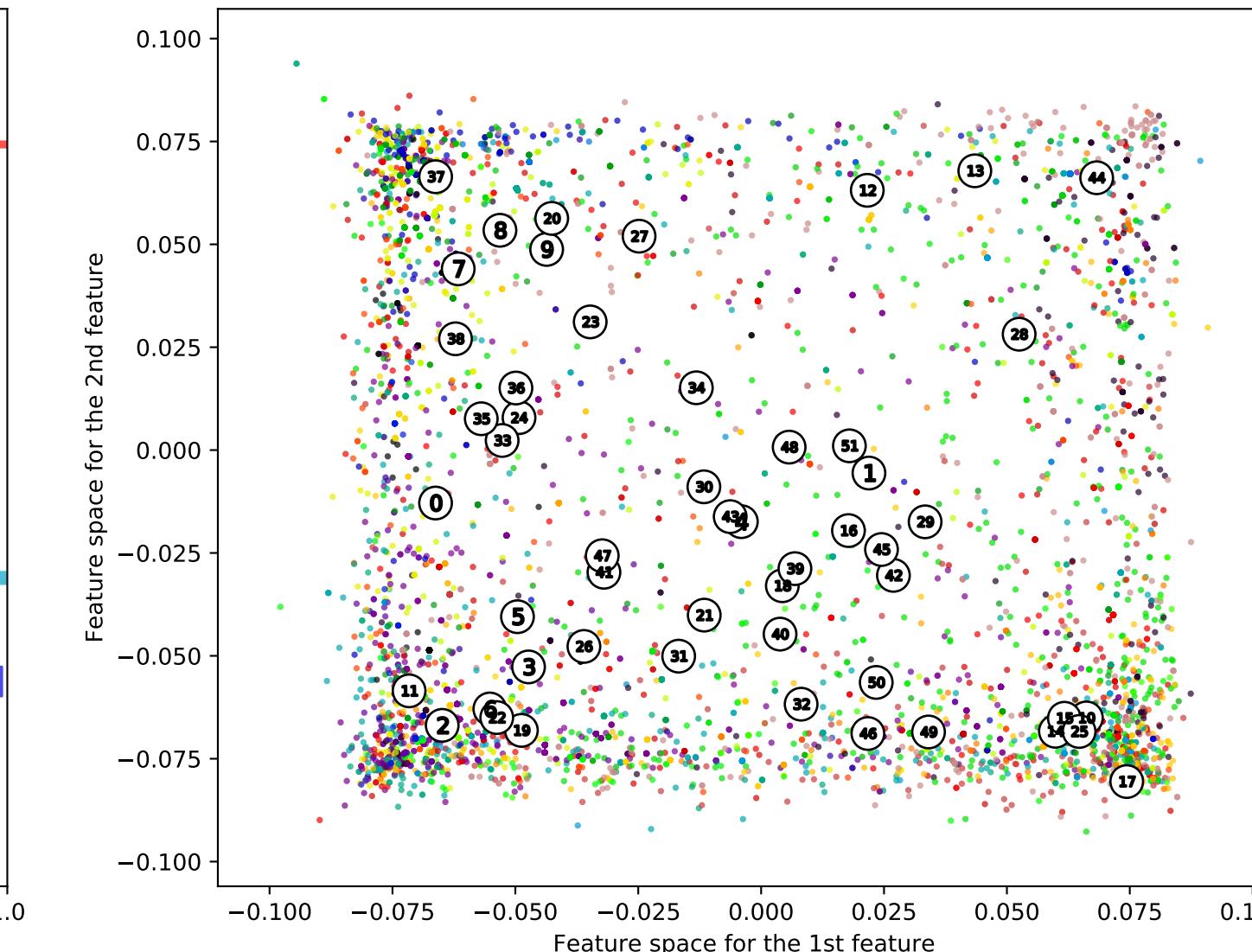


Silhouette analysis for KMeans clustering on sample data with n_clusters = 52 with Average Silhouette of: 0.3066425323486328

The silhouette plot for the various clusters.

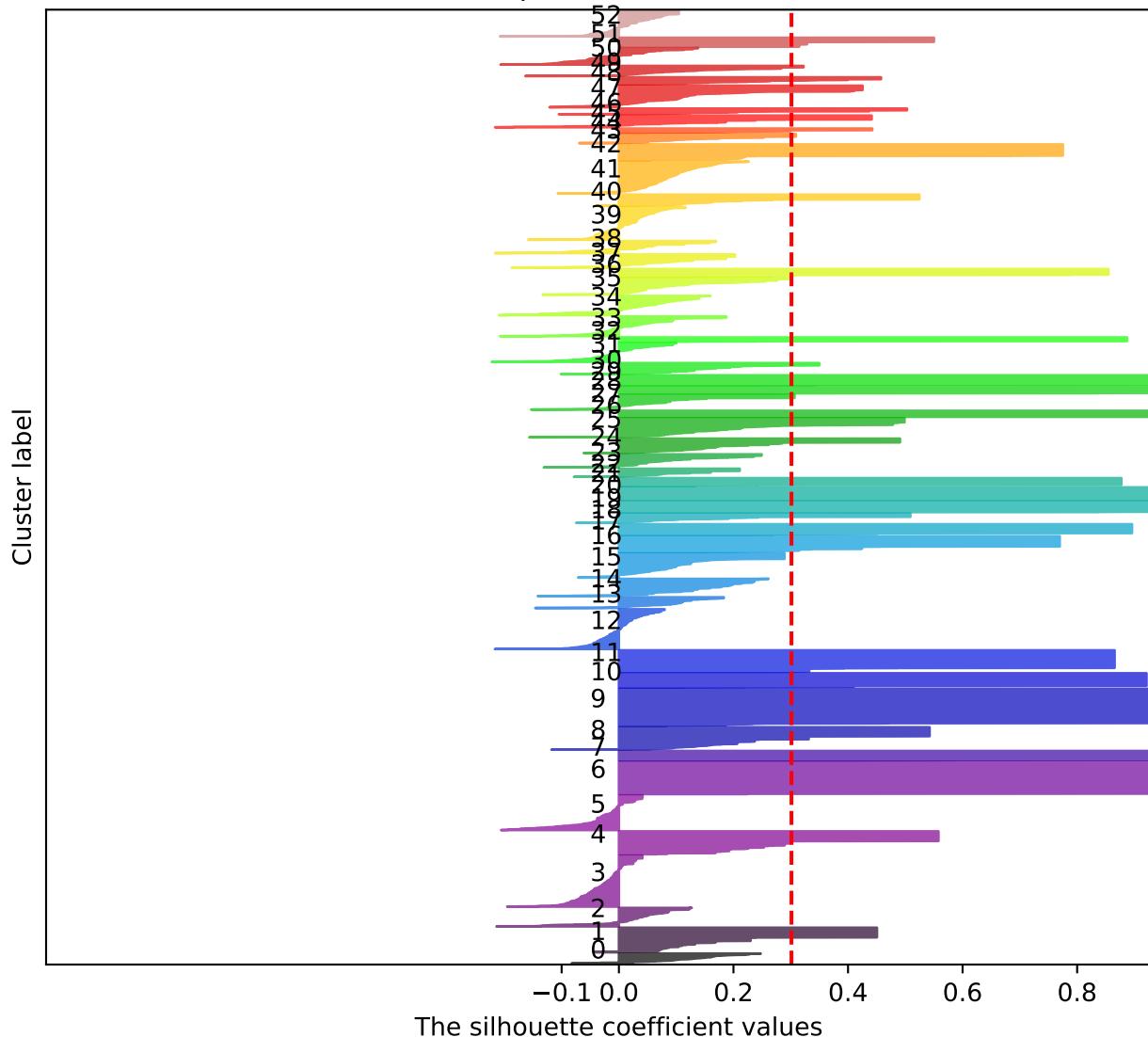


The visualization of the clustered data.

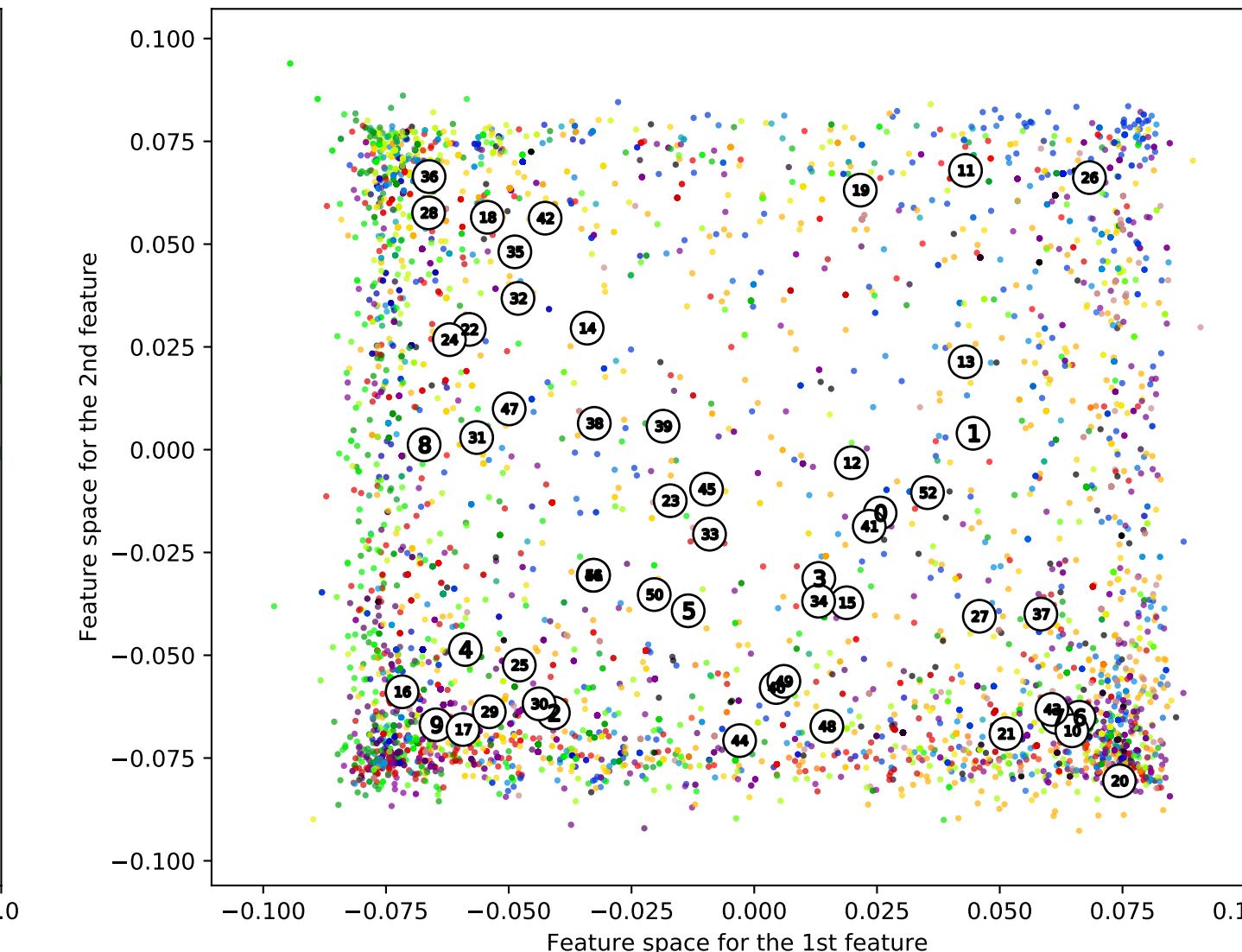


Silhouette analysis for KMeans clustering on sample data with n_clusters = 53 with Average Silhouette of: 0.3012336492538452

The silhouette plot for the various clusters.

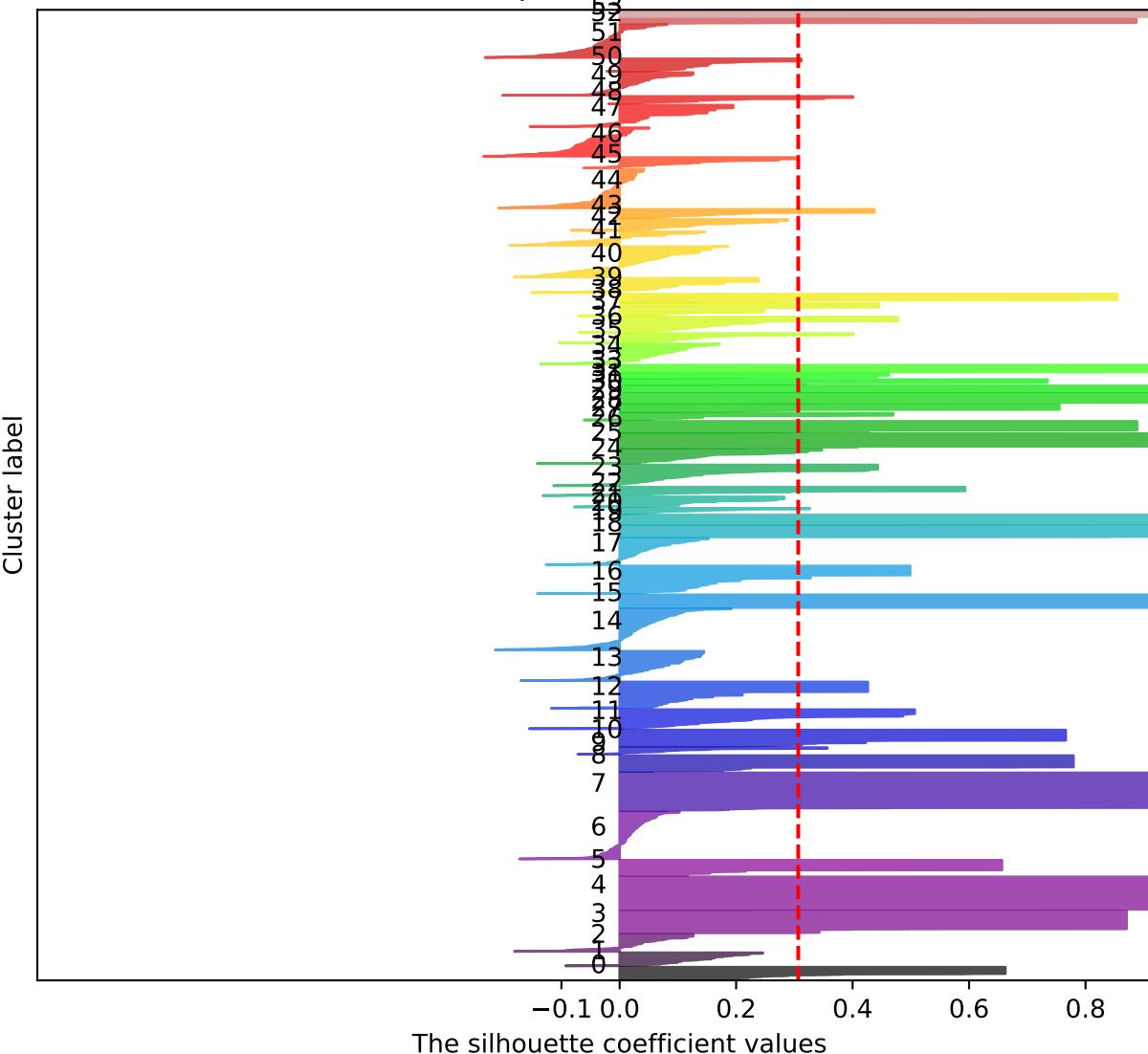


The visualization of the clustered data.

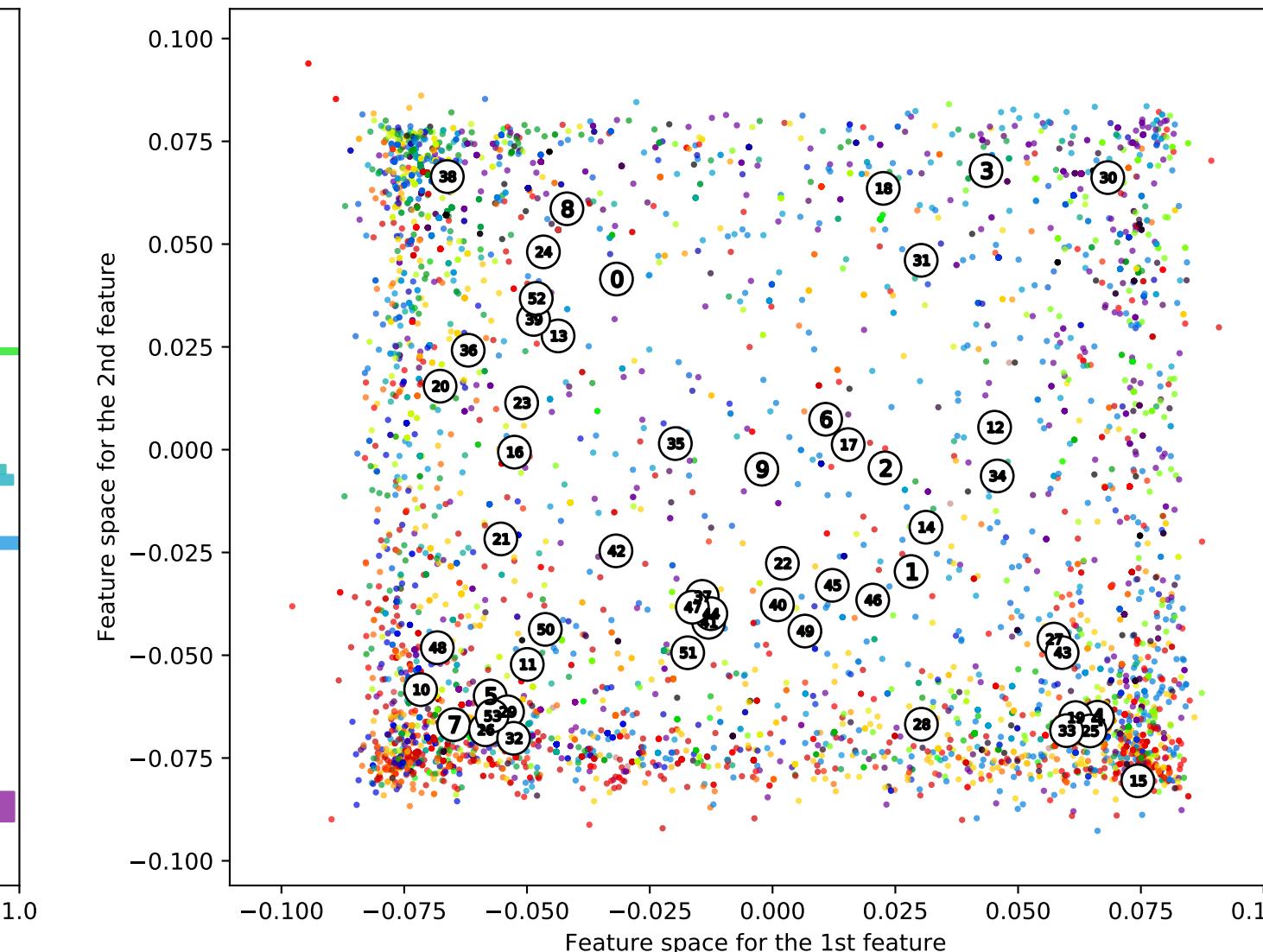


Silhouette analysis for KMeans clustering on sample data with n_clusters = 54 with Average Silhouette of: 0.3066951632499695

The silhouette plot for the various clusters

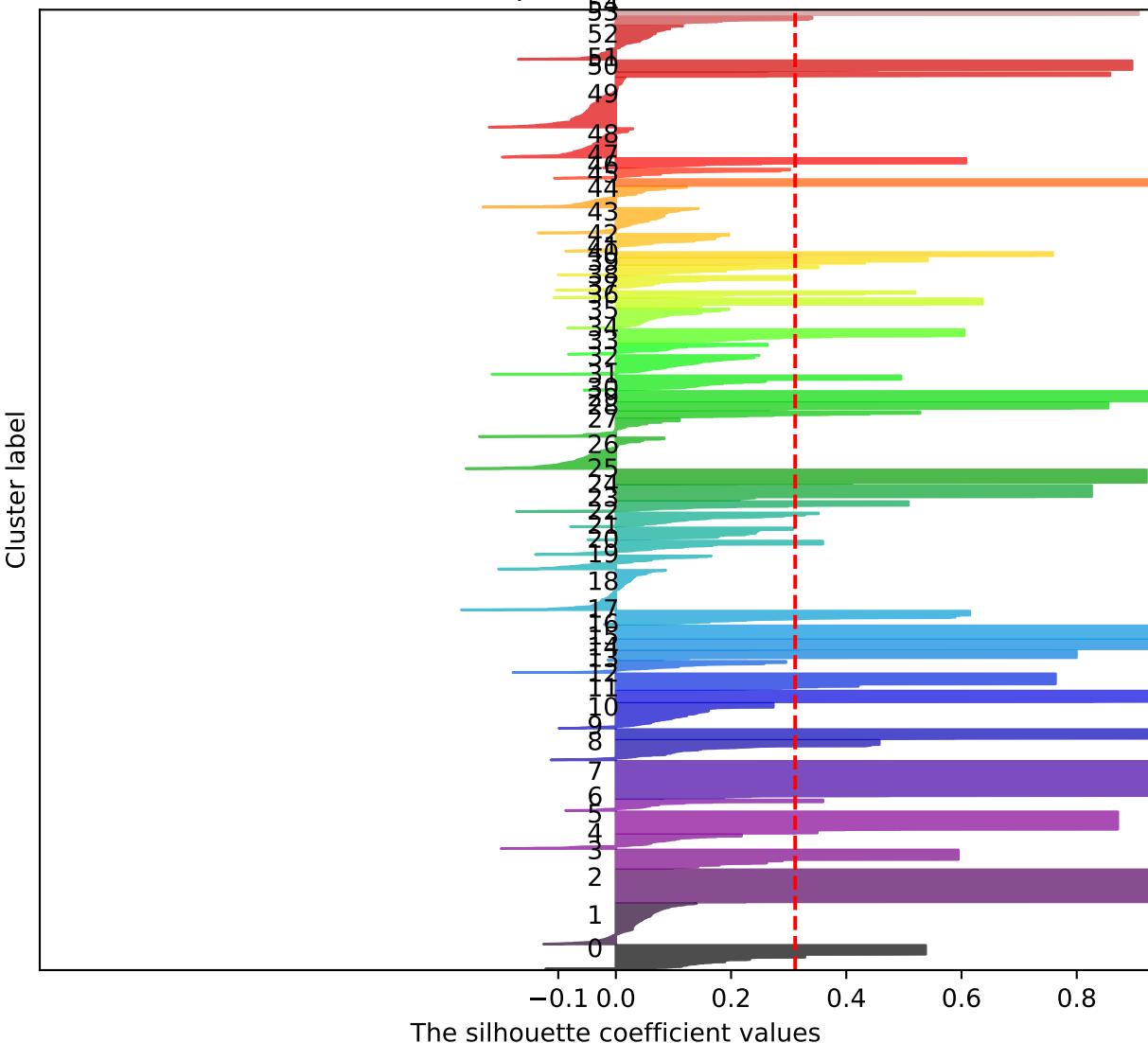


The visualization of the clustered data

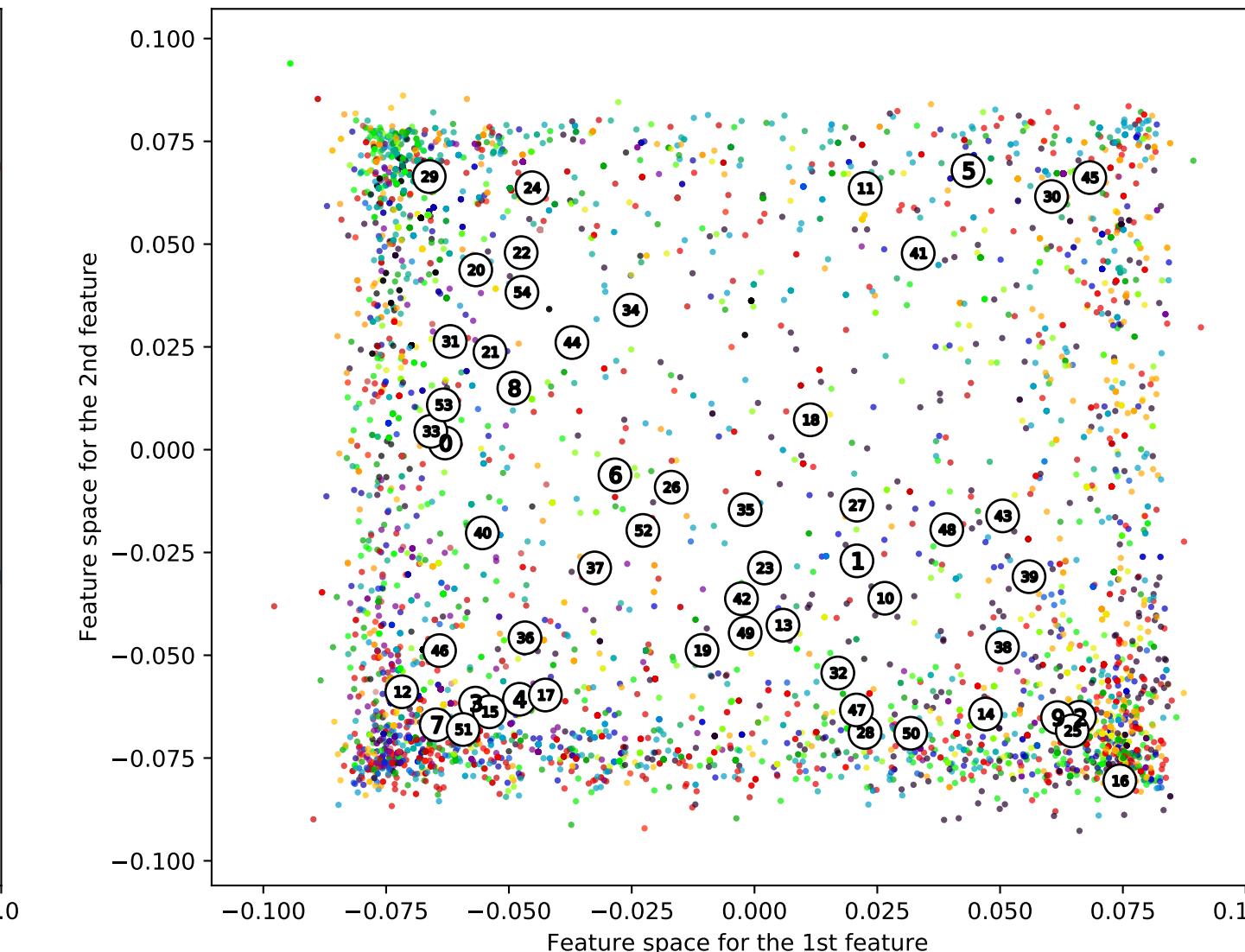


Silhouette analysis for KMeans clustering on sample data with n_clusters = 55 with Average Silhouette of: 0.3113197982311249

The silhouette plot for the various clusters.

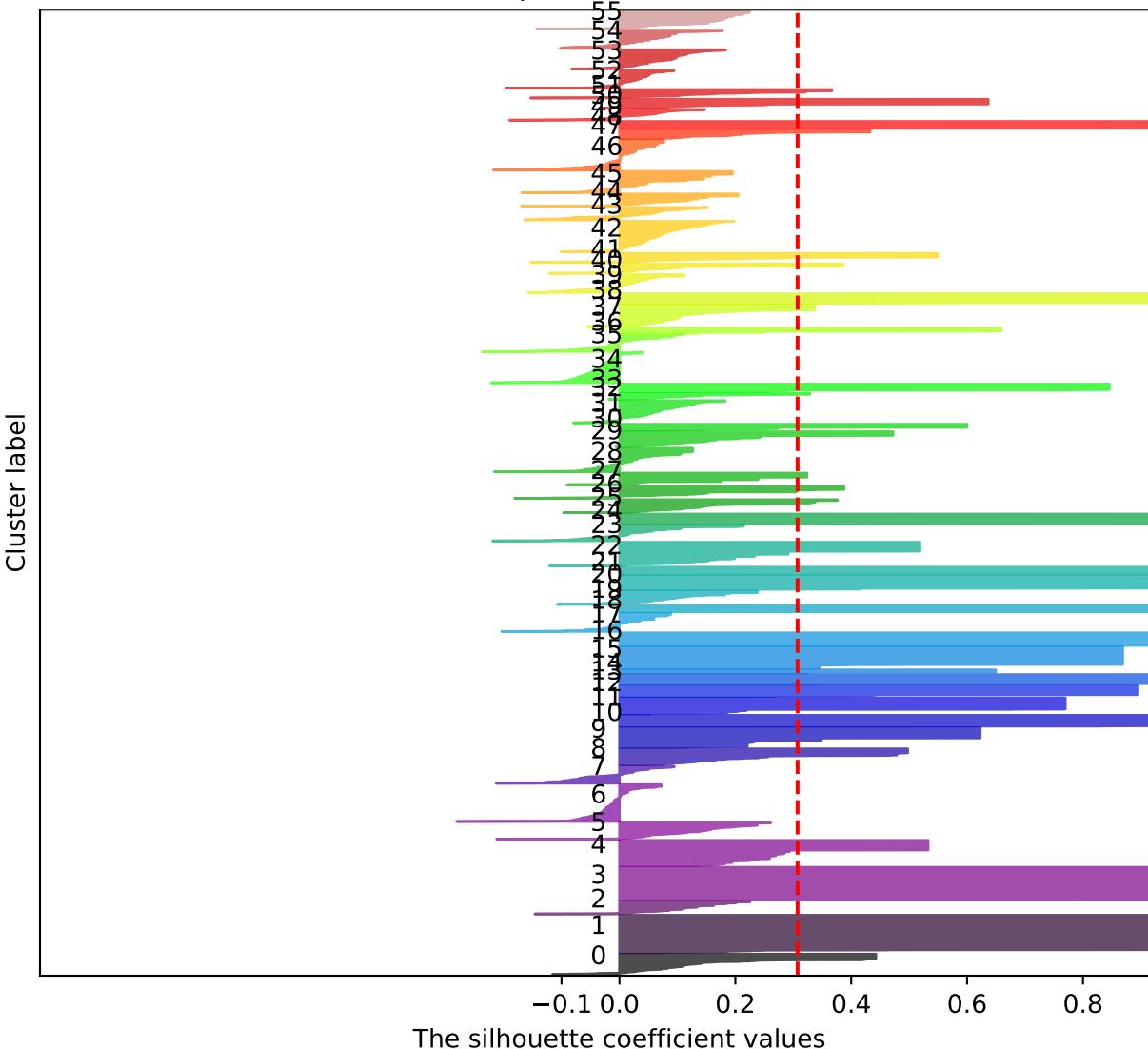


The visualization of the clustered data.

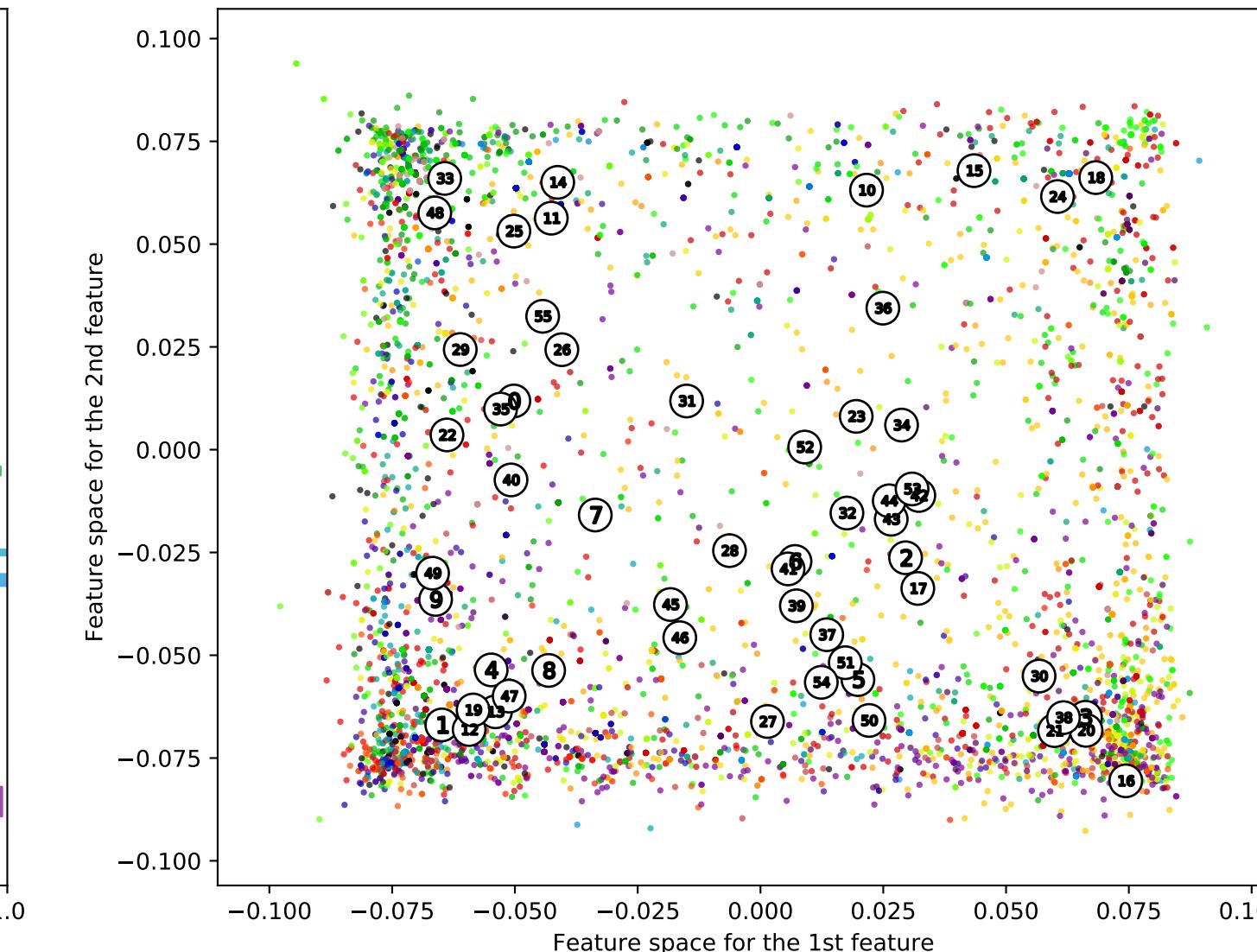


Silhouette analysis for KMeans clustering on sample data with n_clusters = 56 with Average Silhouette of: 0.30740460753440857

The silhouette plot for the various clusters.

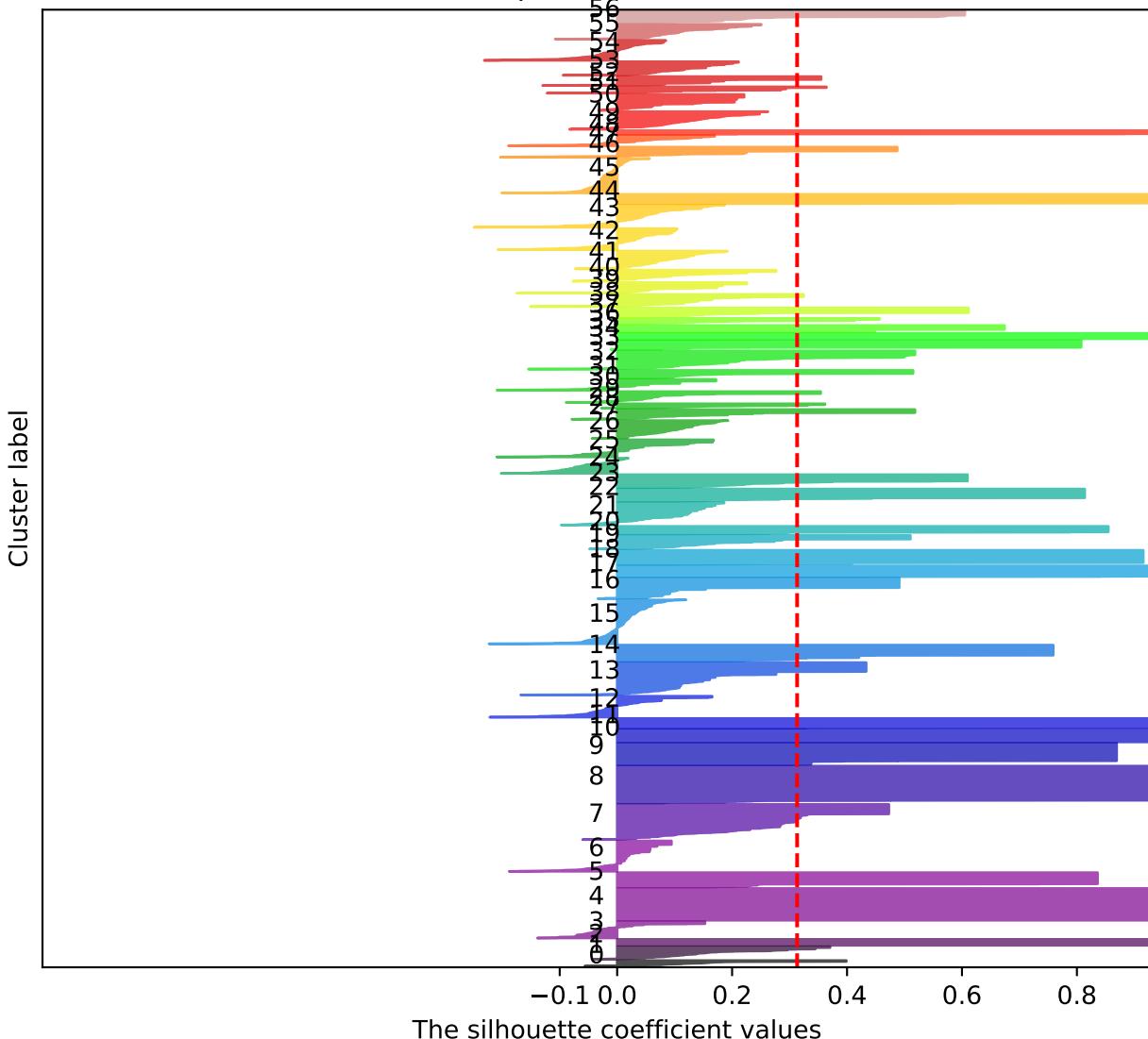


The visualization of the clustered data.

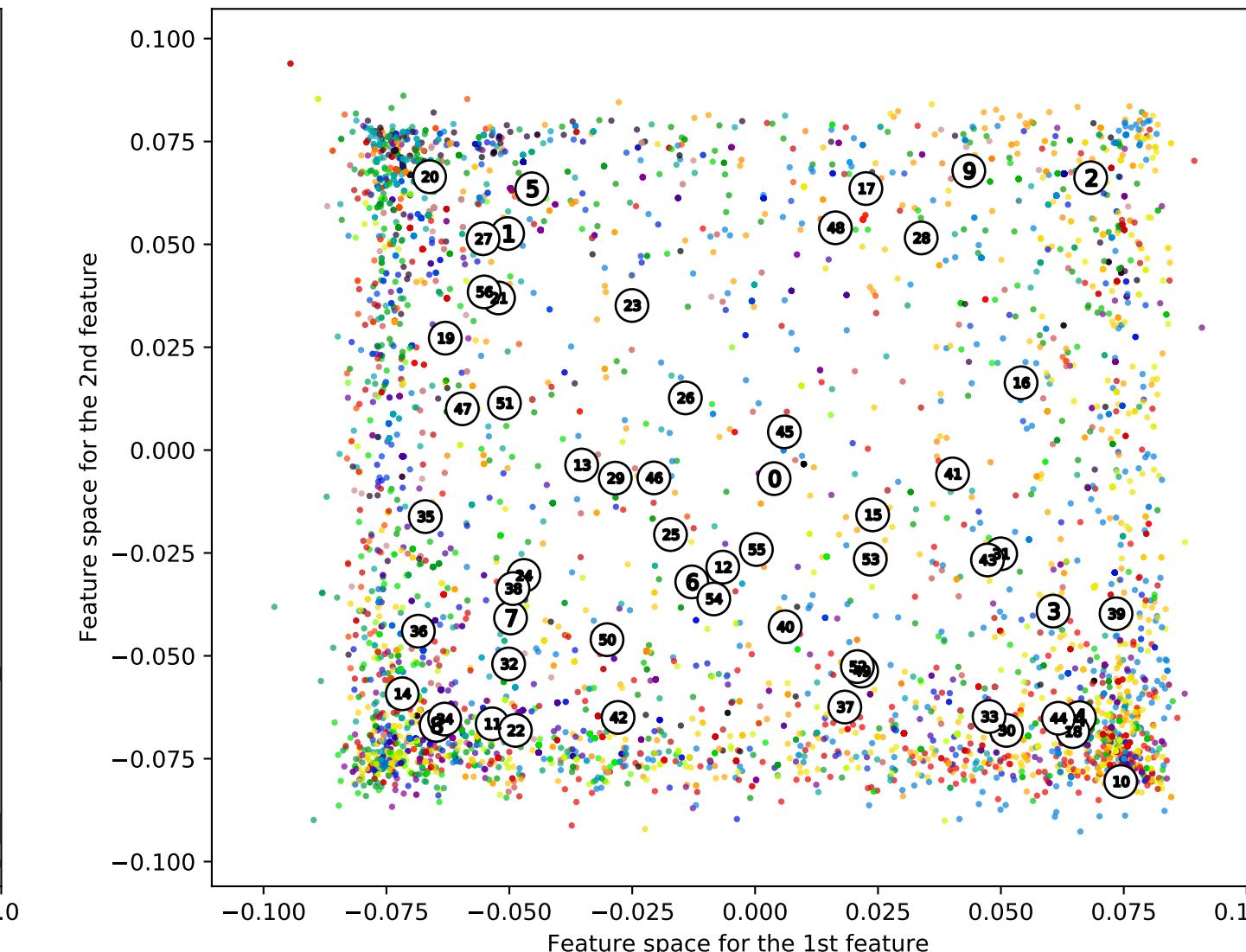


Silhouette analysis for KMeans clustering on sample data with n_clusters = 57 with Average Silhouette of: 0.3131486475467682

The silhouette plot for the various clusters.

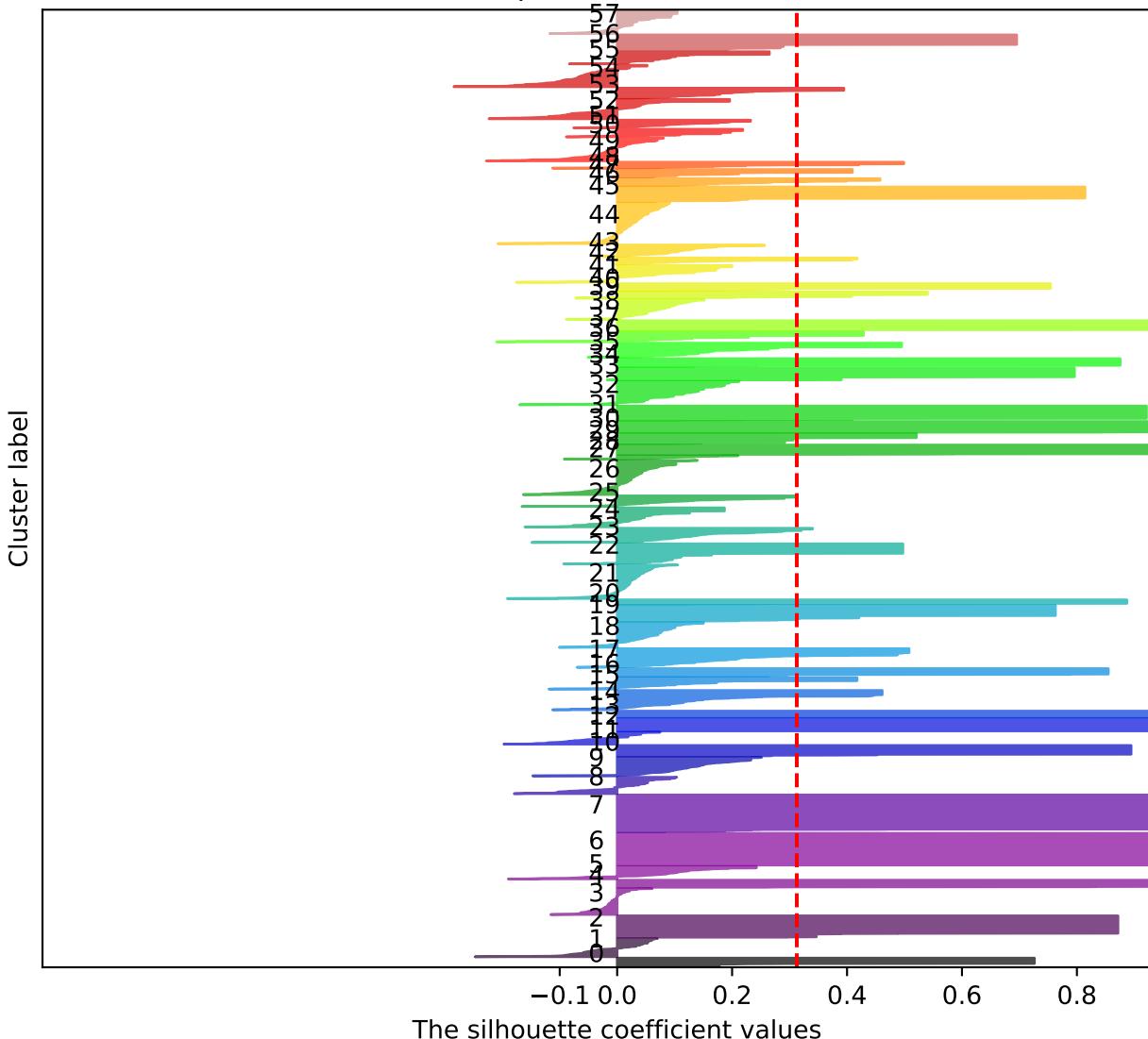


The visualization of the clustered data.

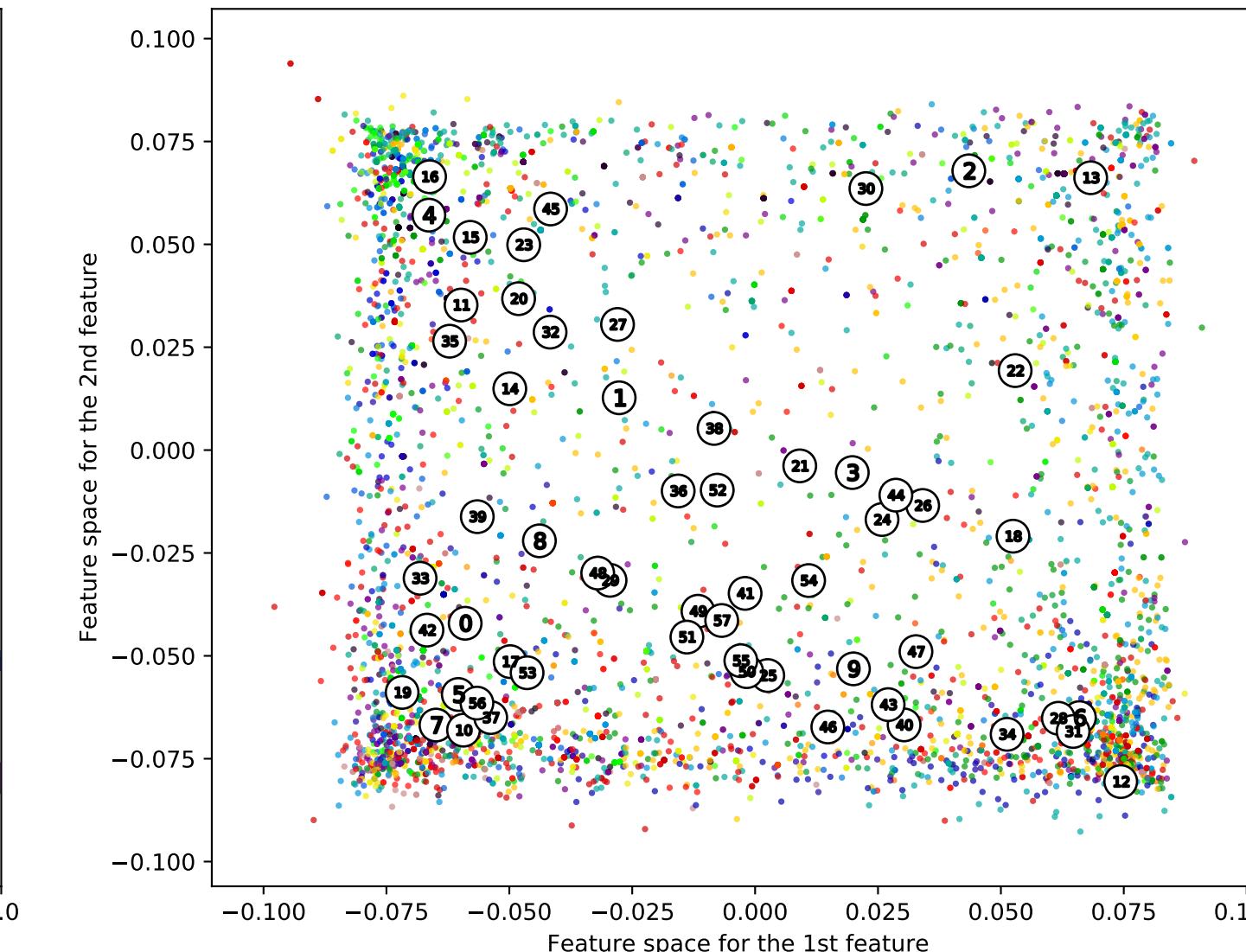


Silhouette analysis for KMeans clustering on sample data with n_clusters = 58 with Average Silhouette of: 0.3125639259815216

The silhouette plot for the various clusters.

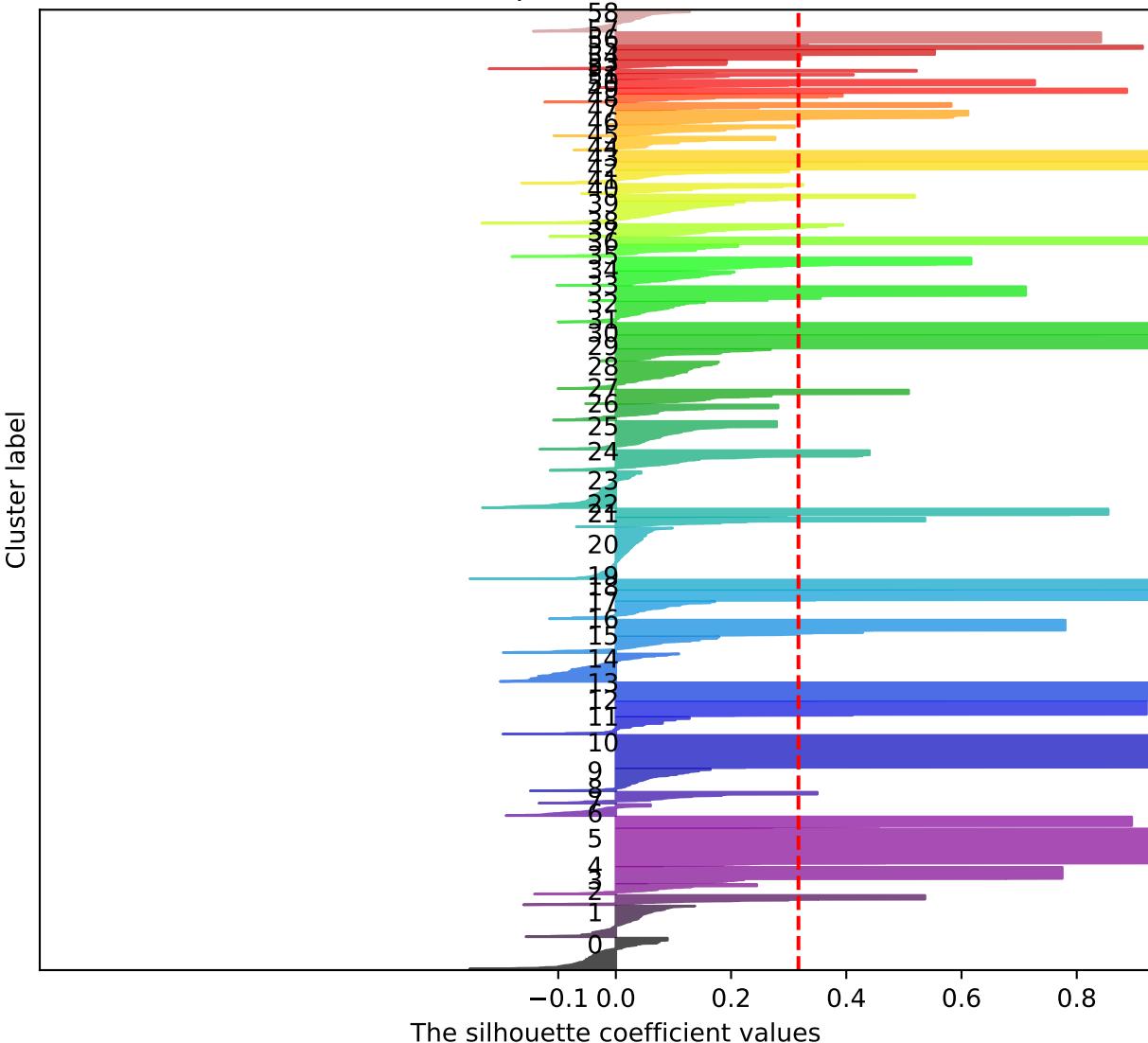


The visualization of the clustered data.

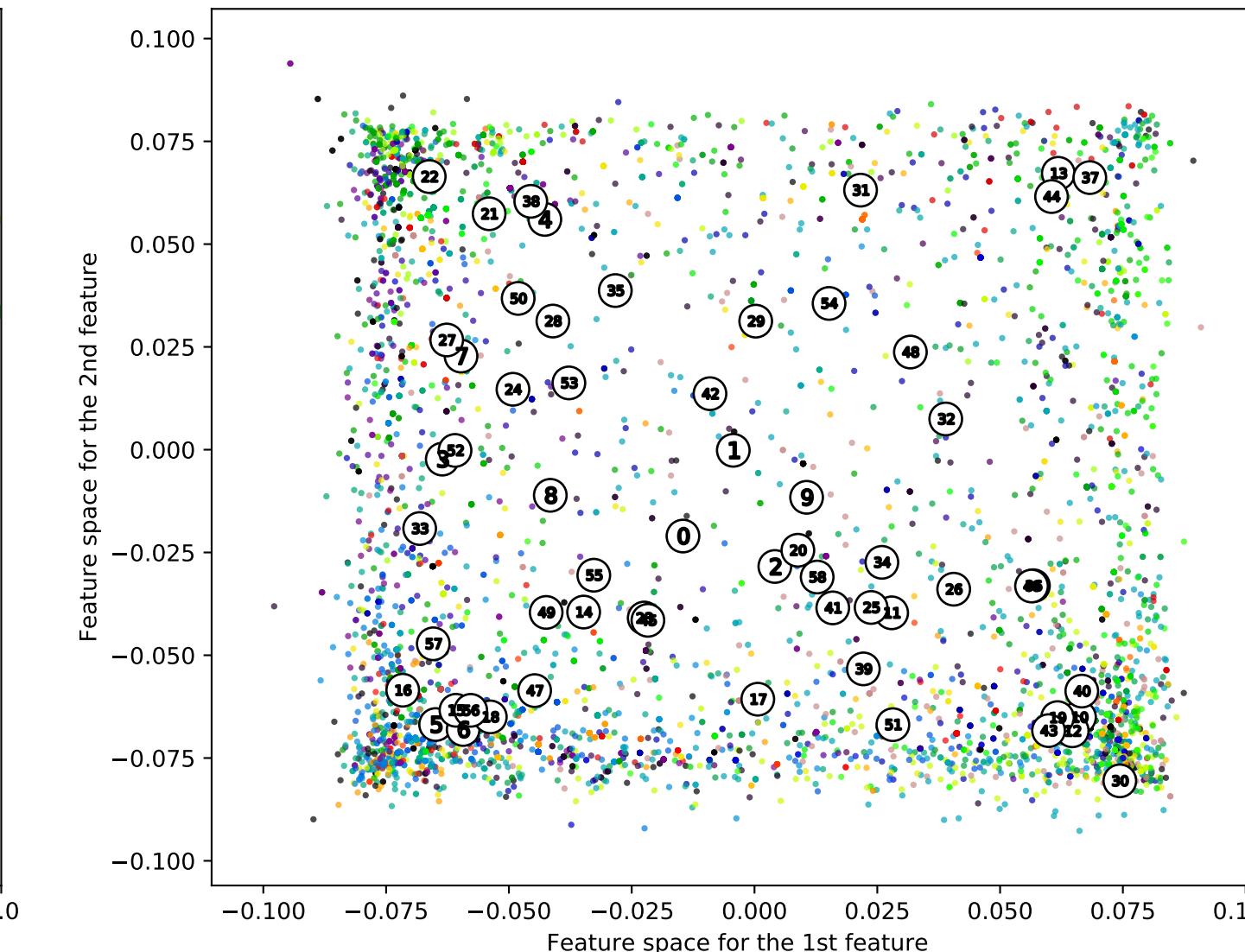


Silhouette analysis for KMeans clustering on sample data with n_clusters = 59 with Average Silhouette of: 0.31694525480270386

The silhouette plot for the various clusters.

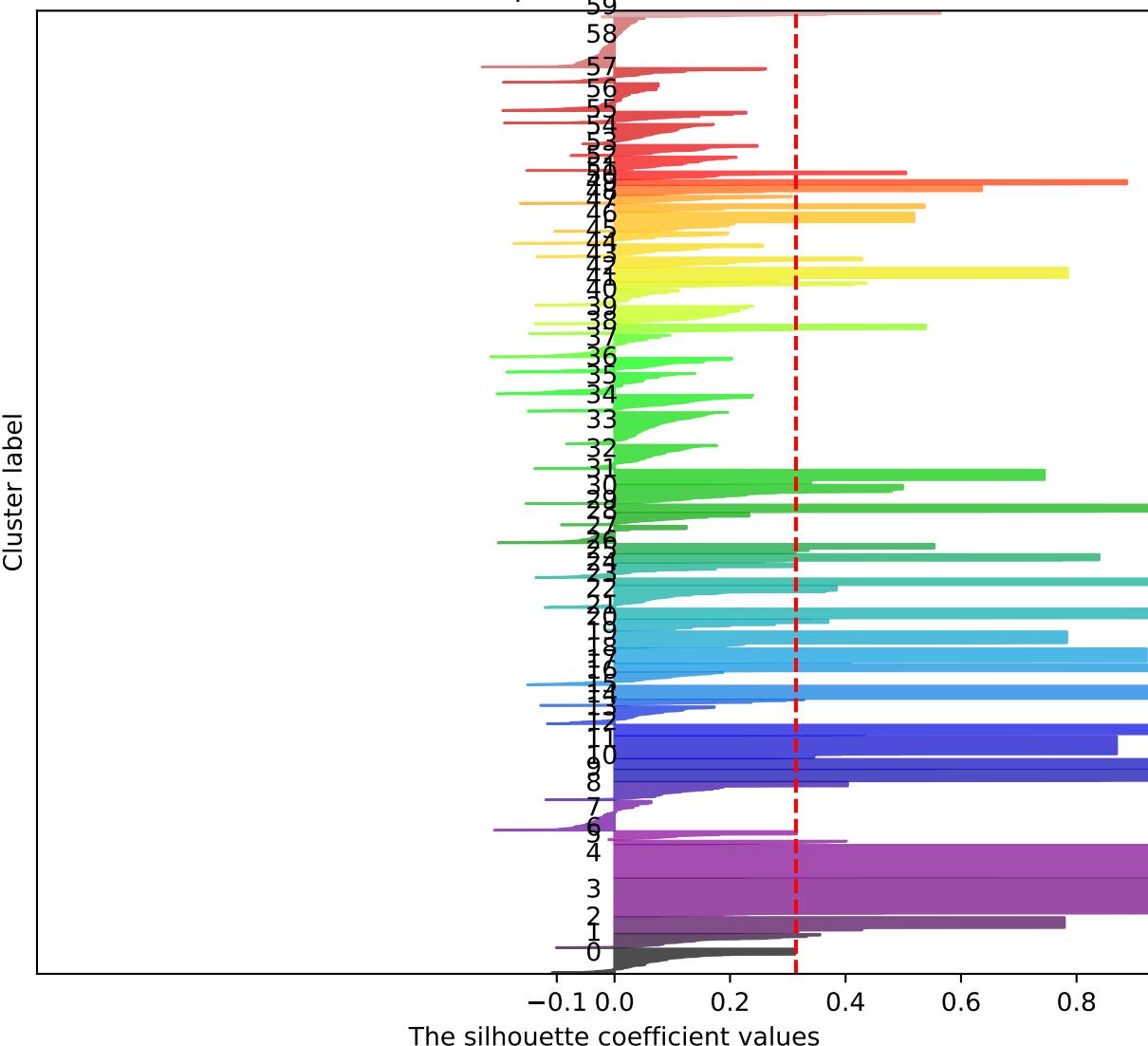


The visualization of the clustered data.

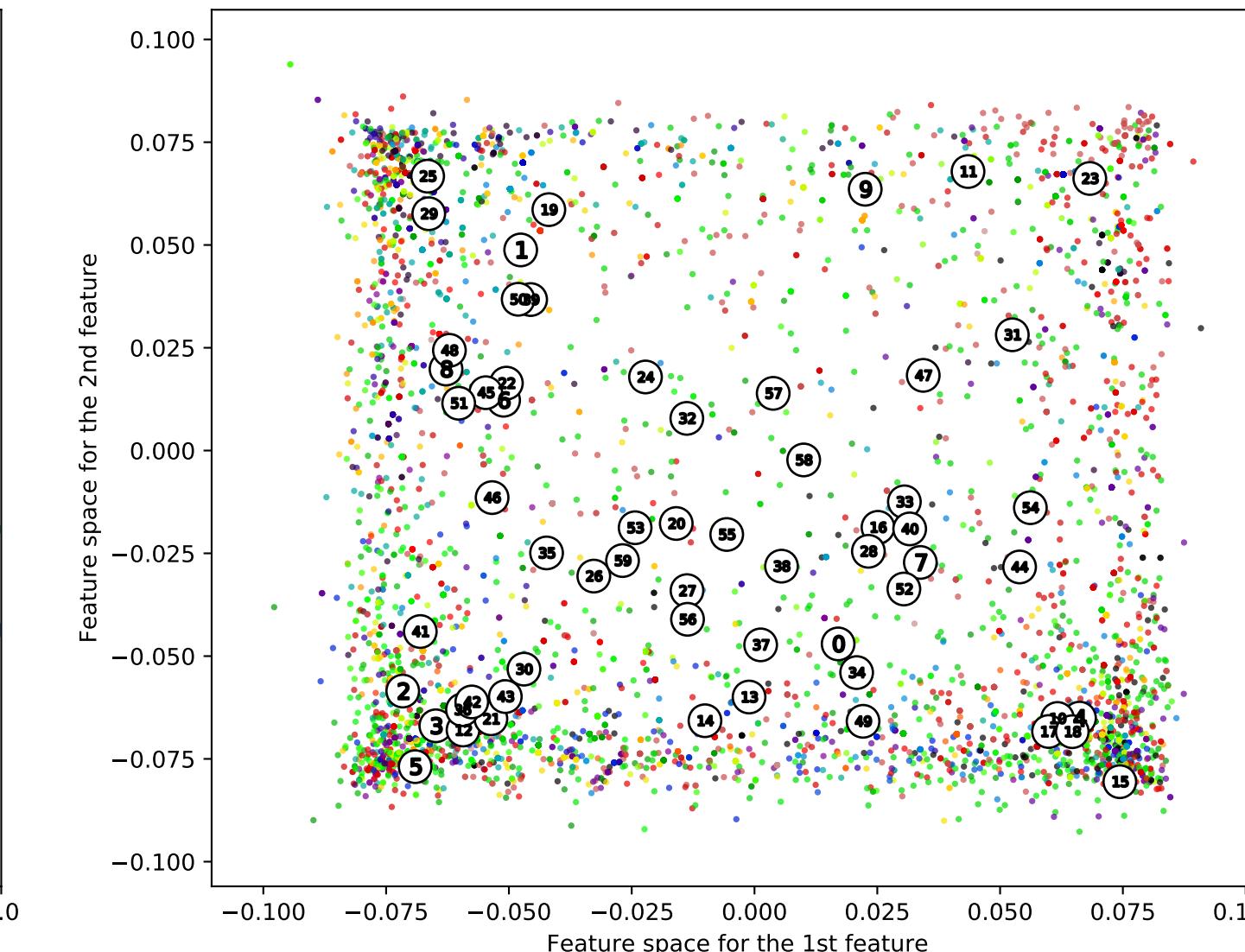


Silhouette analysis for KMeans clustering on sample data with n_clusters = 60 with Average Silhouette of: 0.31414124369621277

The silhouette plot for the various clusters.

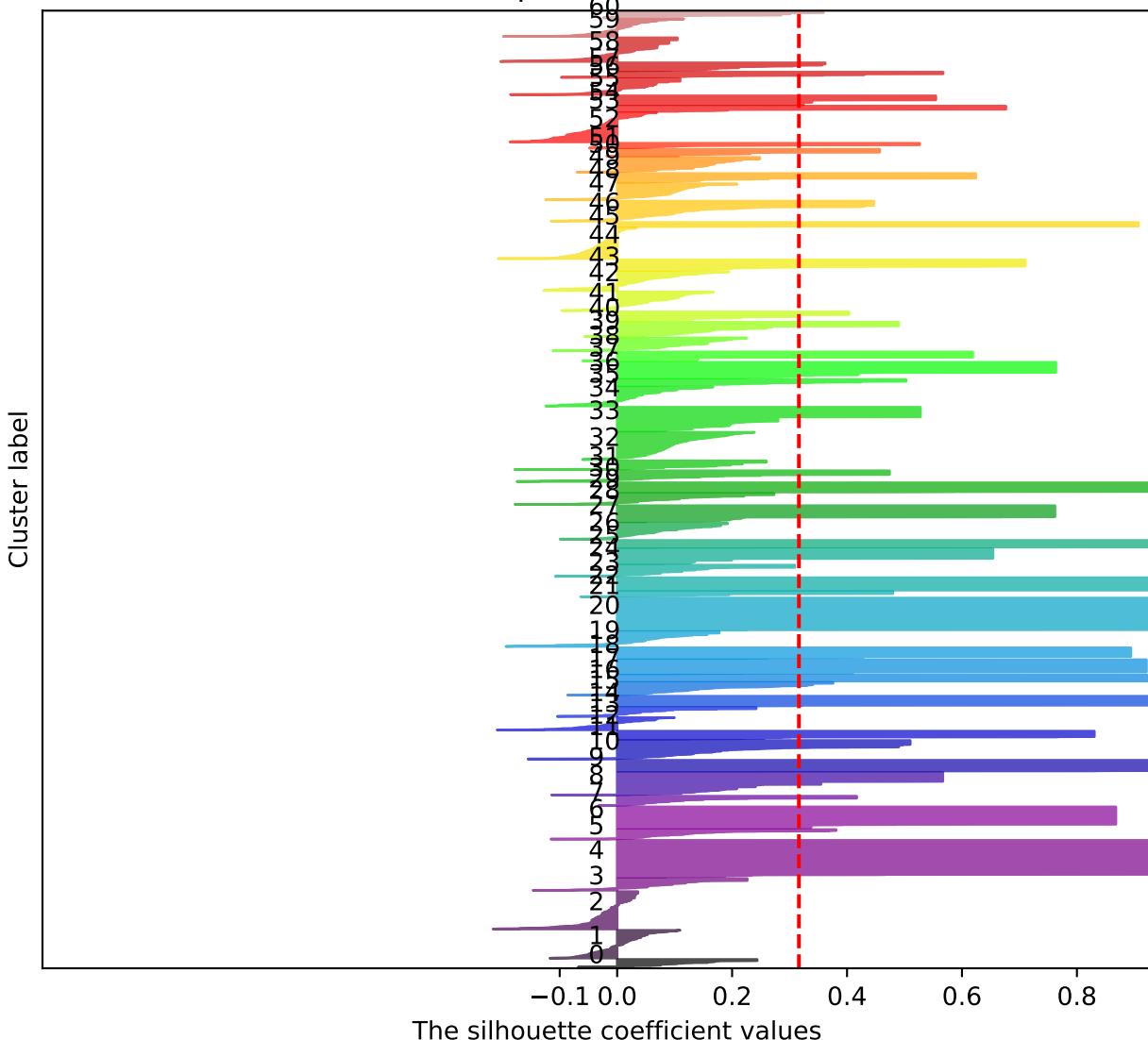


The visualization of the clustered data.

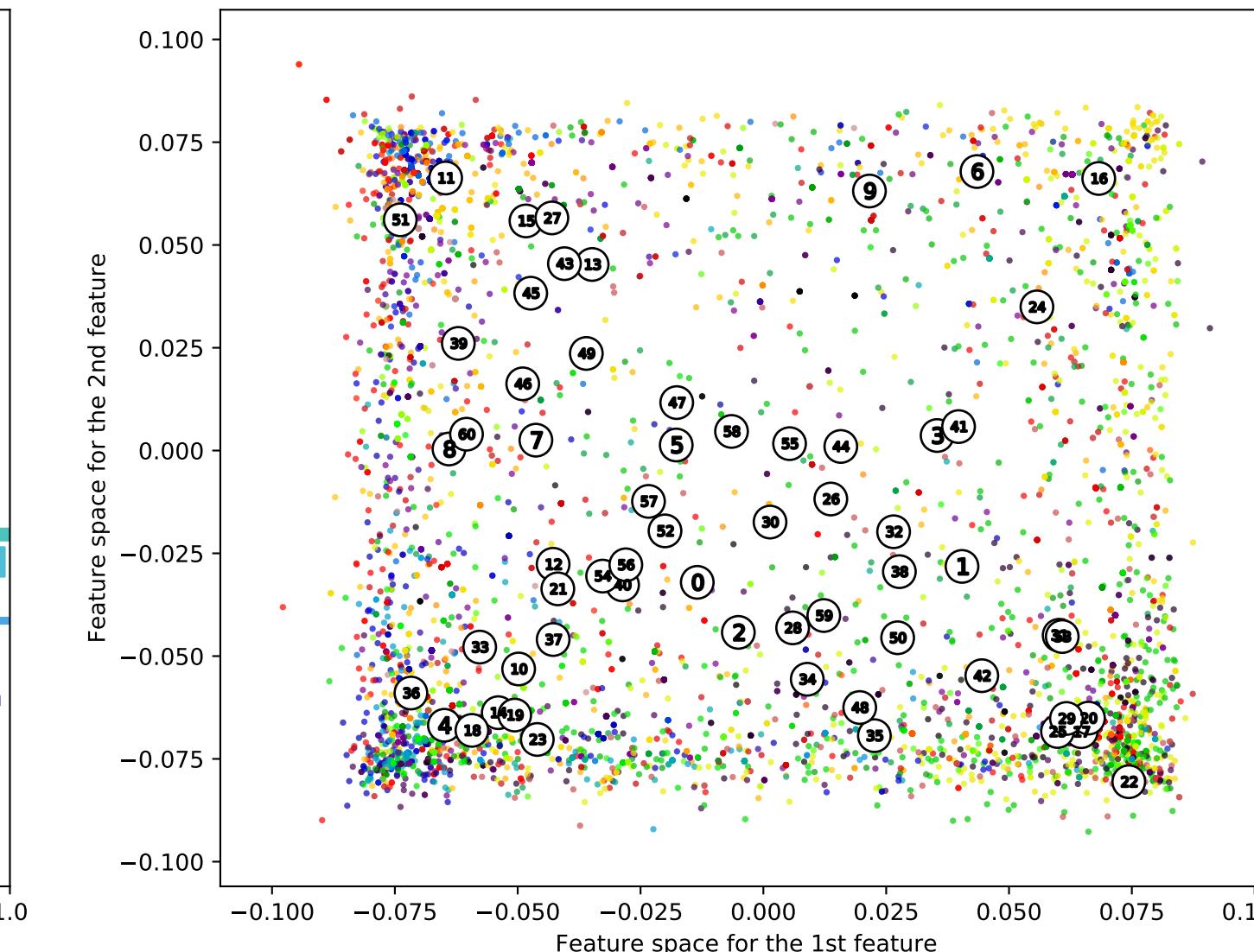


Silhouette analysis for KMeans clustering on sample data with n_clusters = 61 with Average Silhouette of: 0.3162791430950165

The silhouette plot for the various clusters.

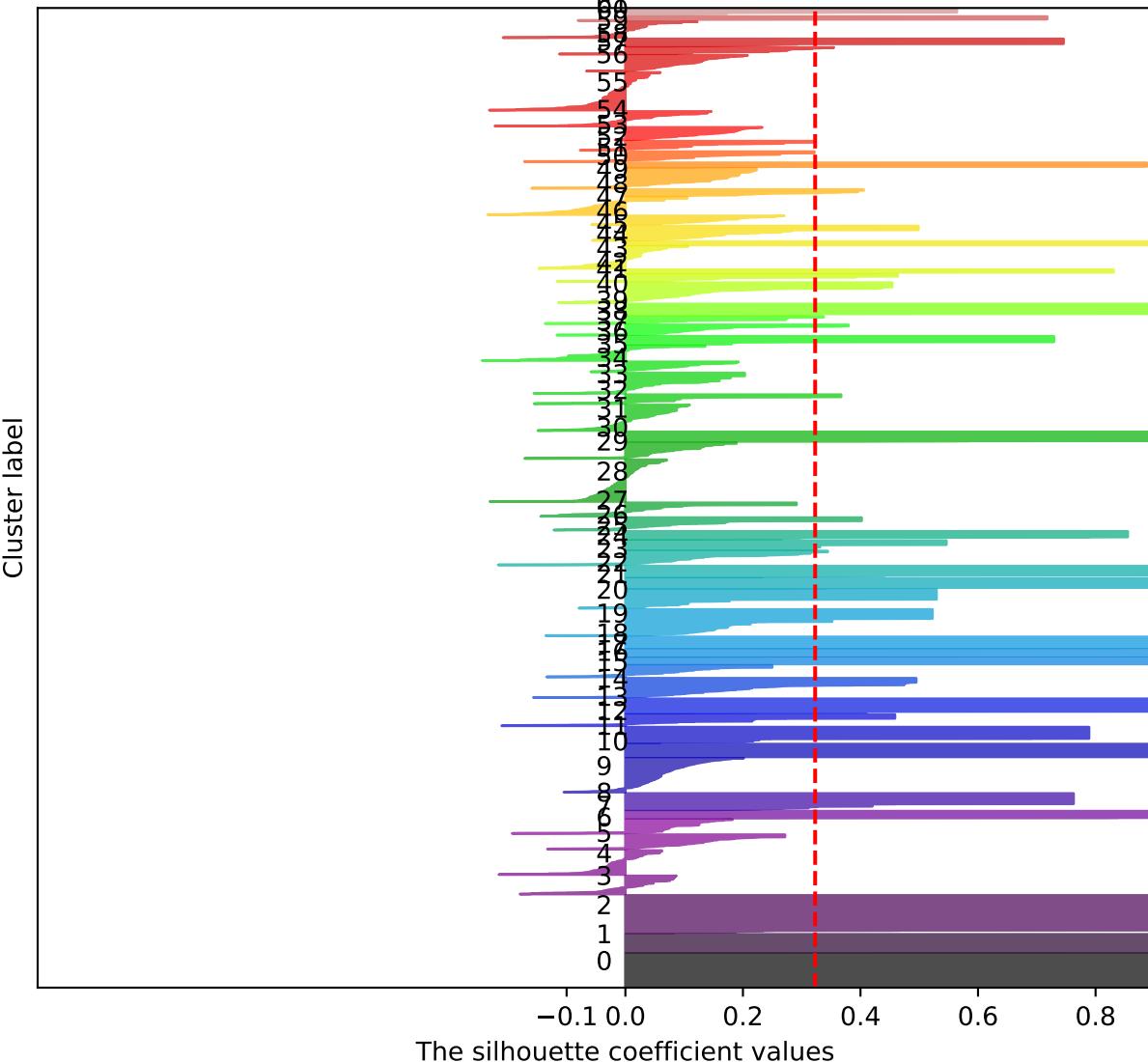


The visualization of the clustered data.

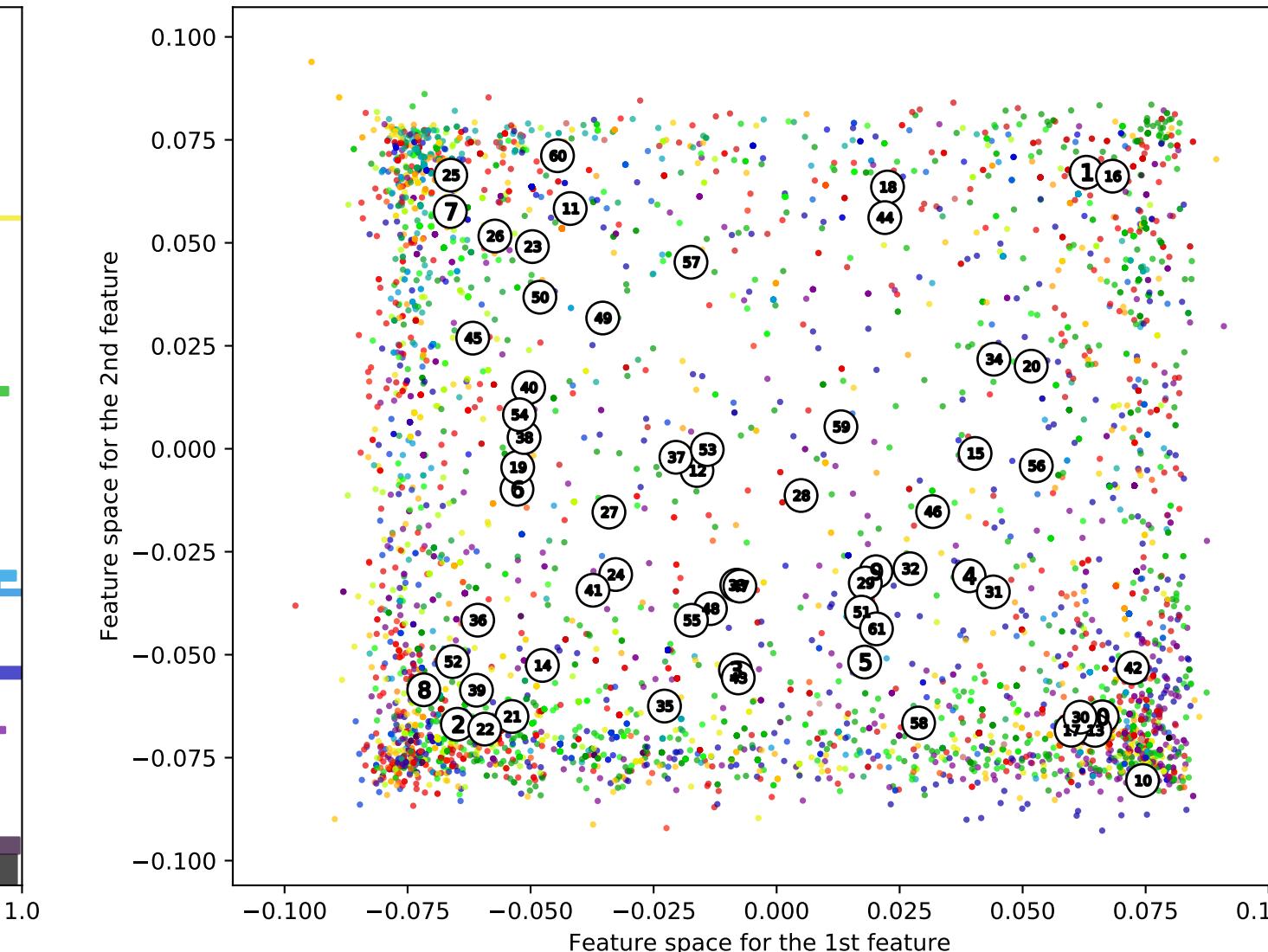


Silhouette analysis for KMeans clustering on sample data with n_clusters = 62 with Average Silhouette of: 0.3228827714920044

The silhouette plot for the various clusters

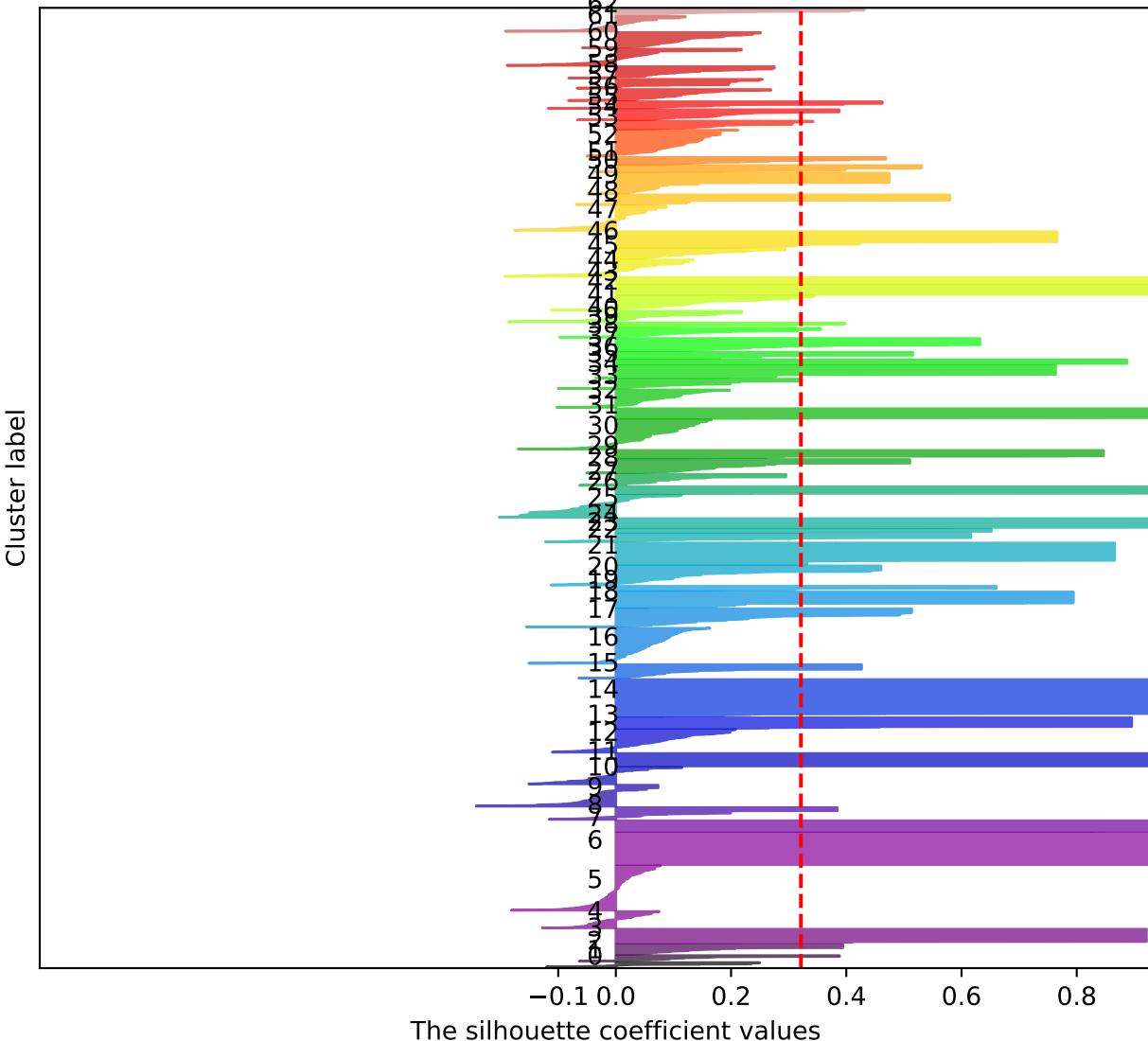


The visualization of the clustered data

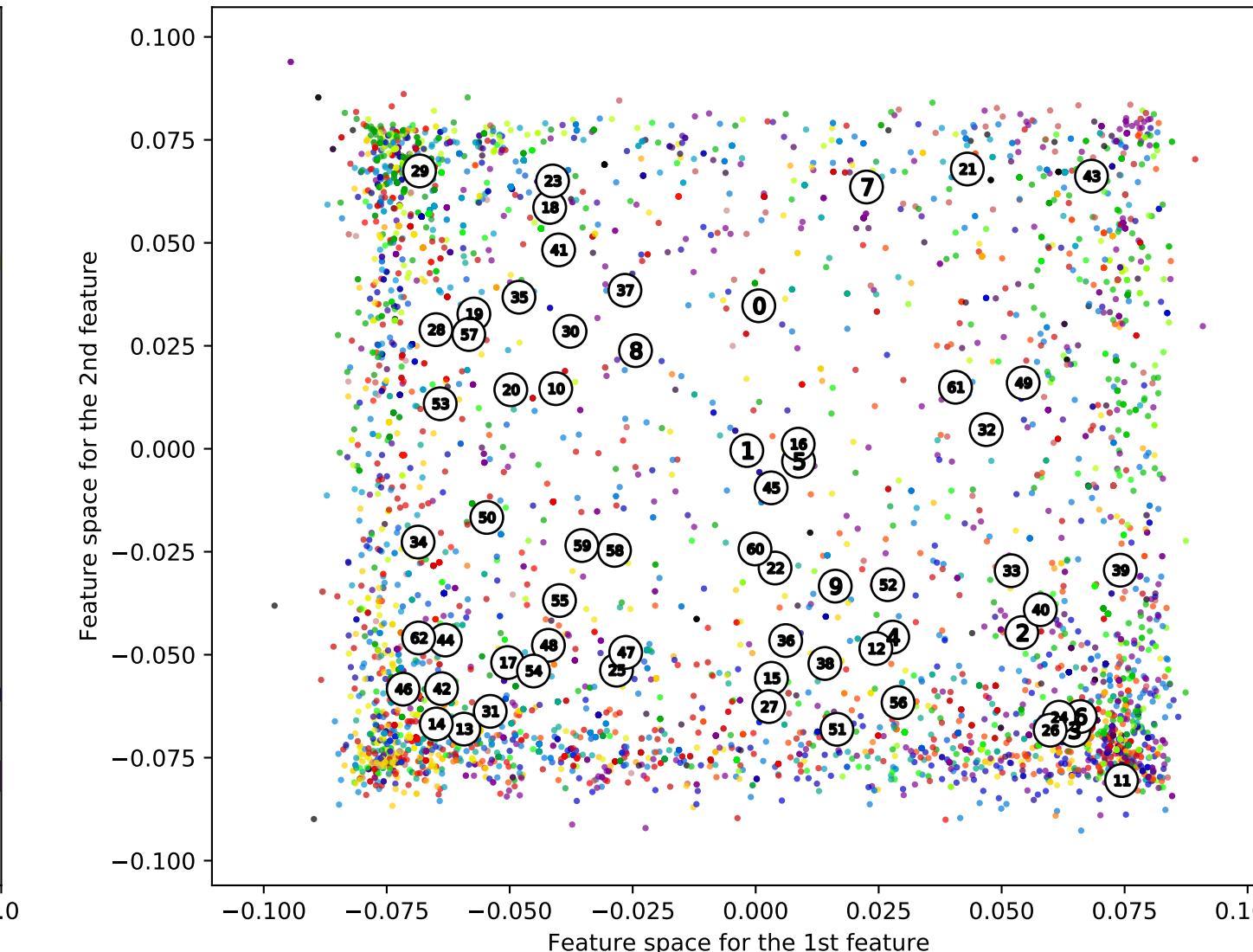


Silhouette analysis for KMeans clustering on sample data with n_clusters = 63 with Average Silhouette of: 0.32128092646598816

The silhouette plot for the various clusters.

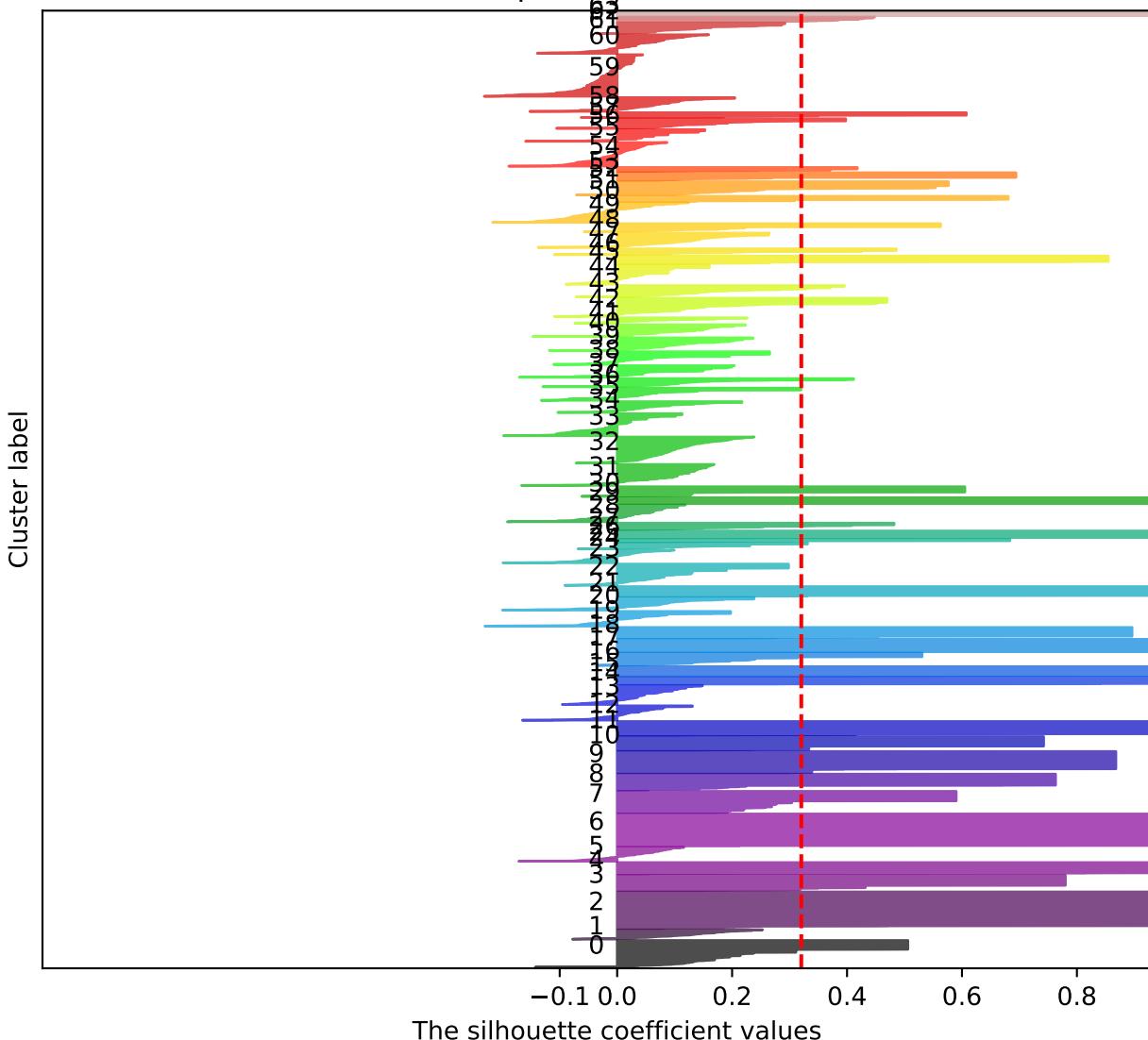


The visualization of the clustered data.

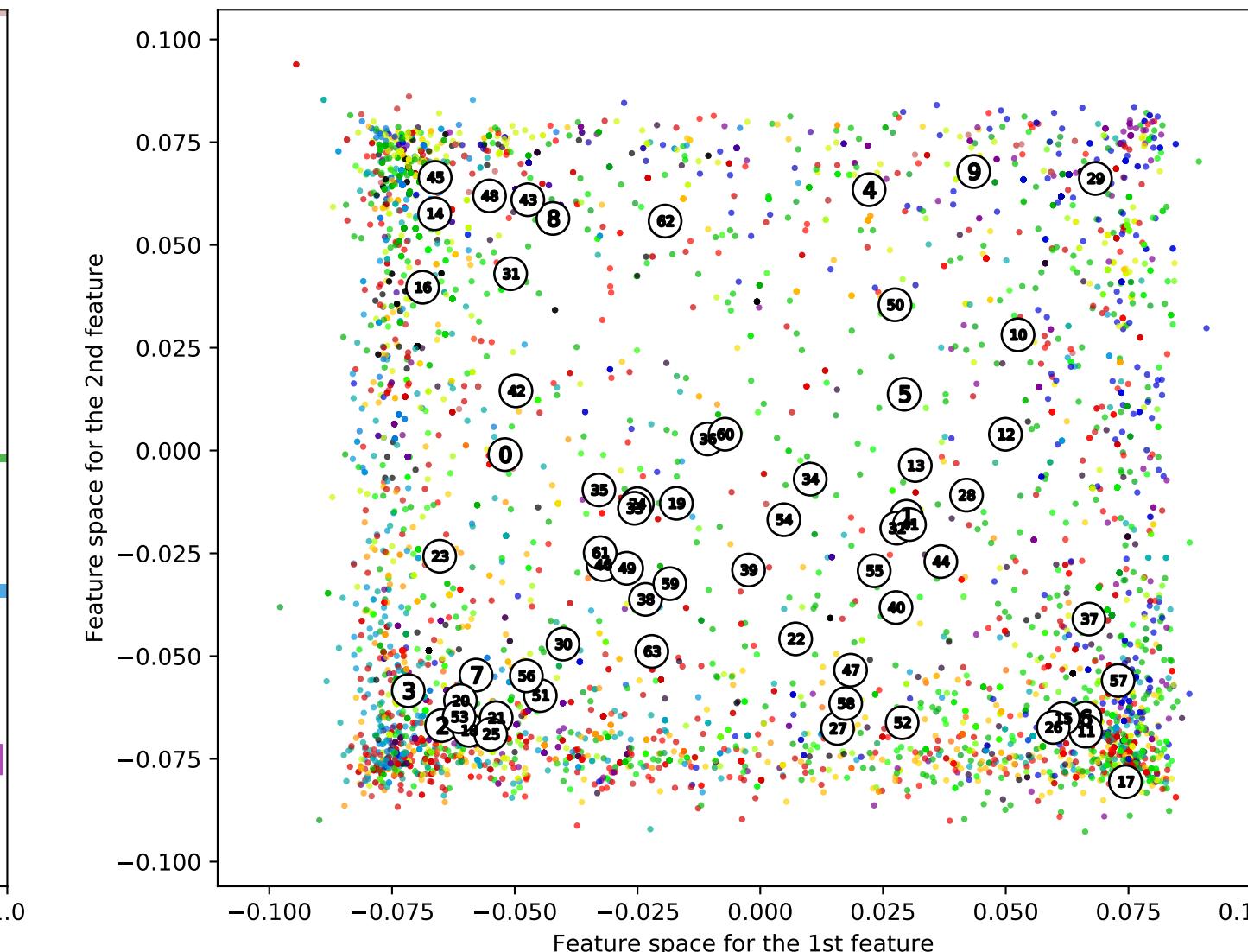


Silhouette analysis for KMeans clustering on sample data with n_clusters = 64 with Average Silhouette of: 0.3204479217529297

The silhouette plot for the various clusters.

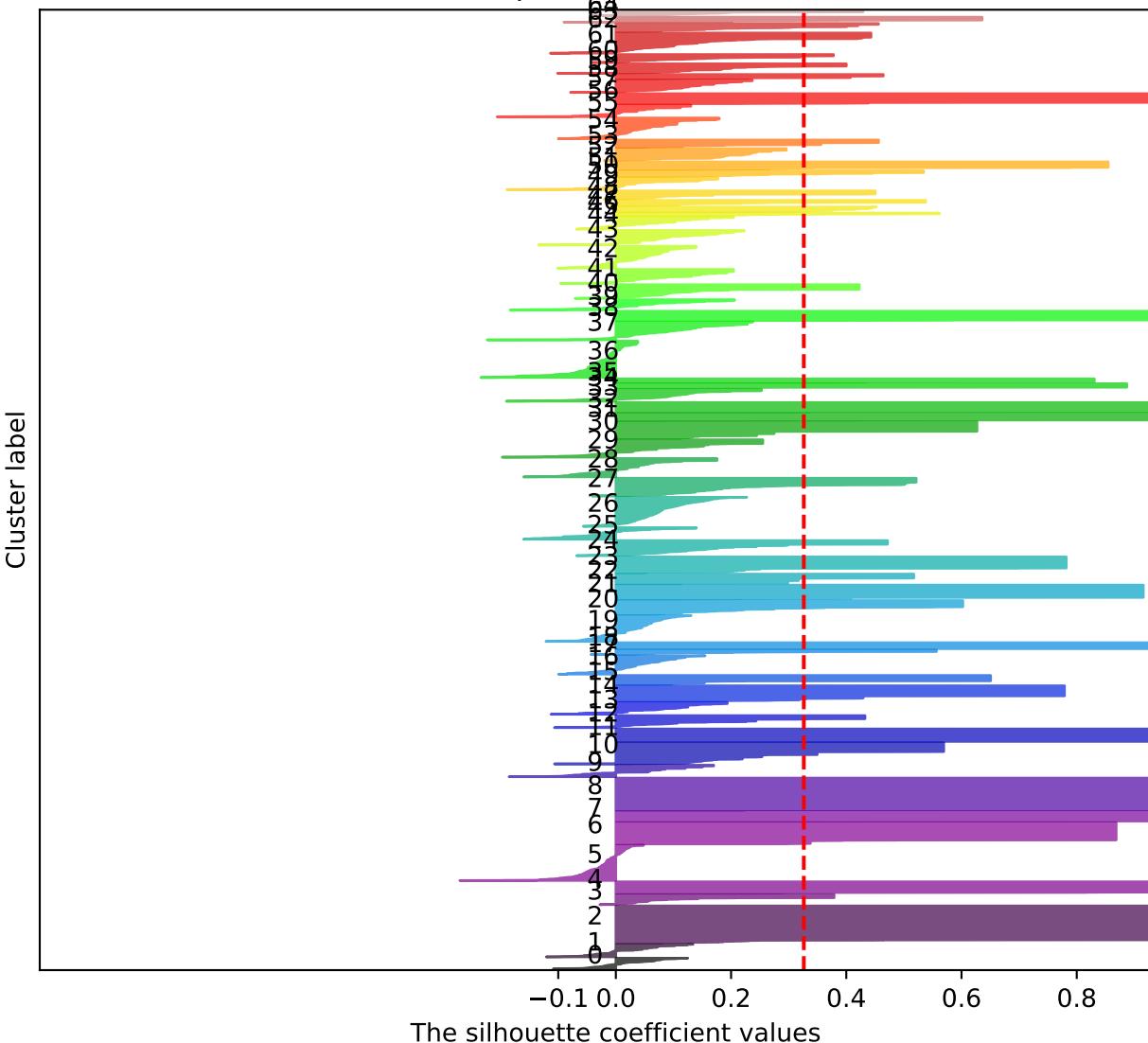


The visualization of the clustered data.

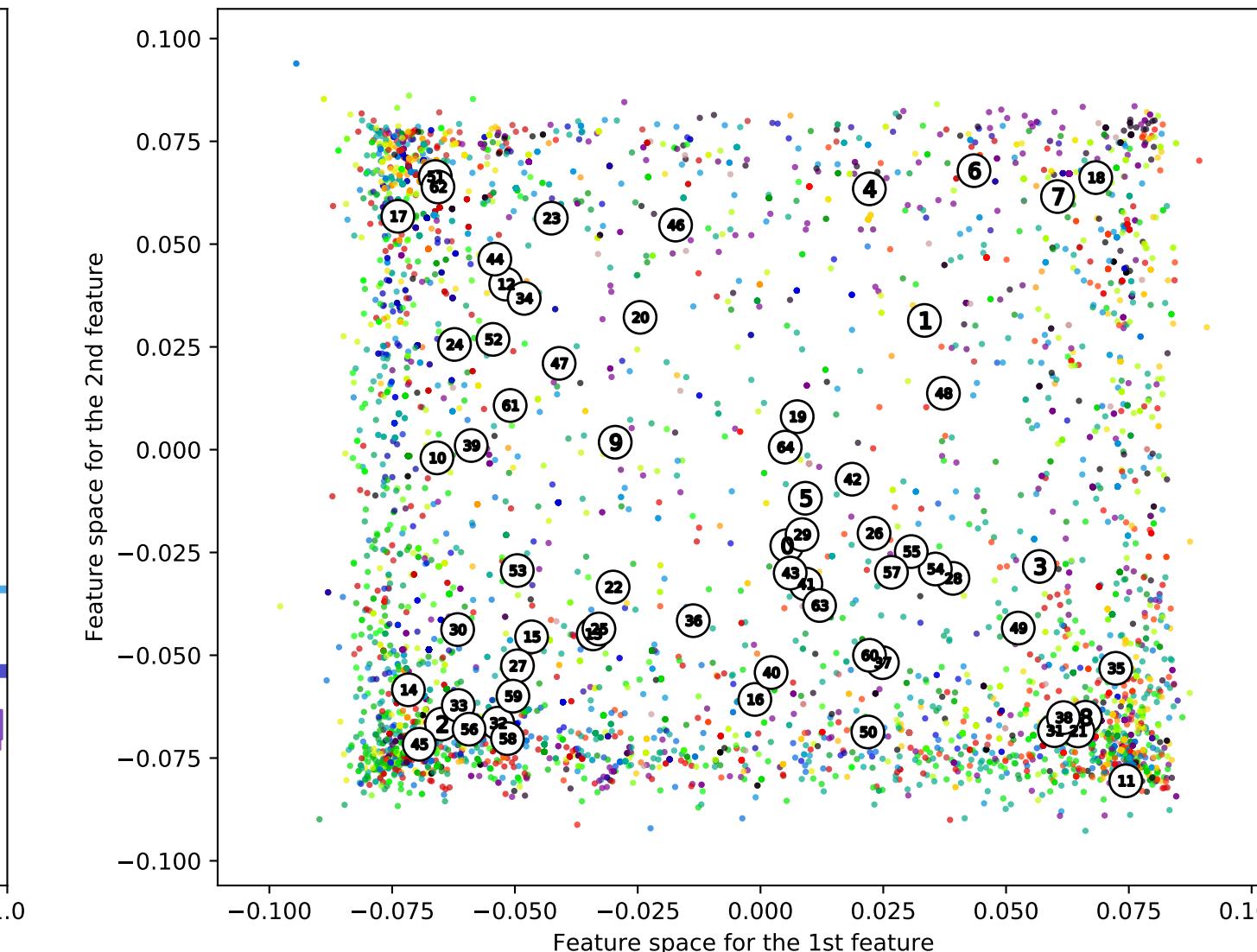


Silhouette analysis for KMeans clustering on sample data with n_clusters = 65 with Average Silhouette of: 0.32624879479408264

The silhouette plot for the various clusters.

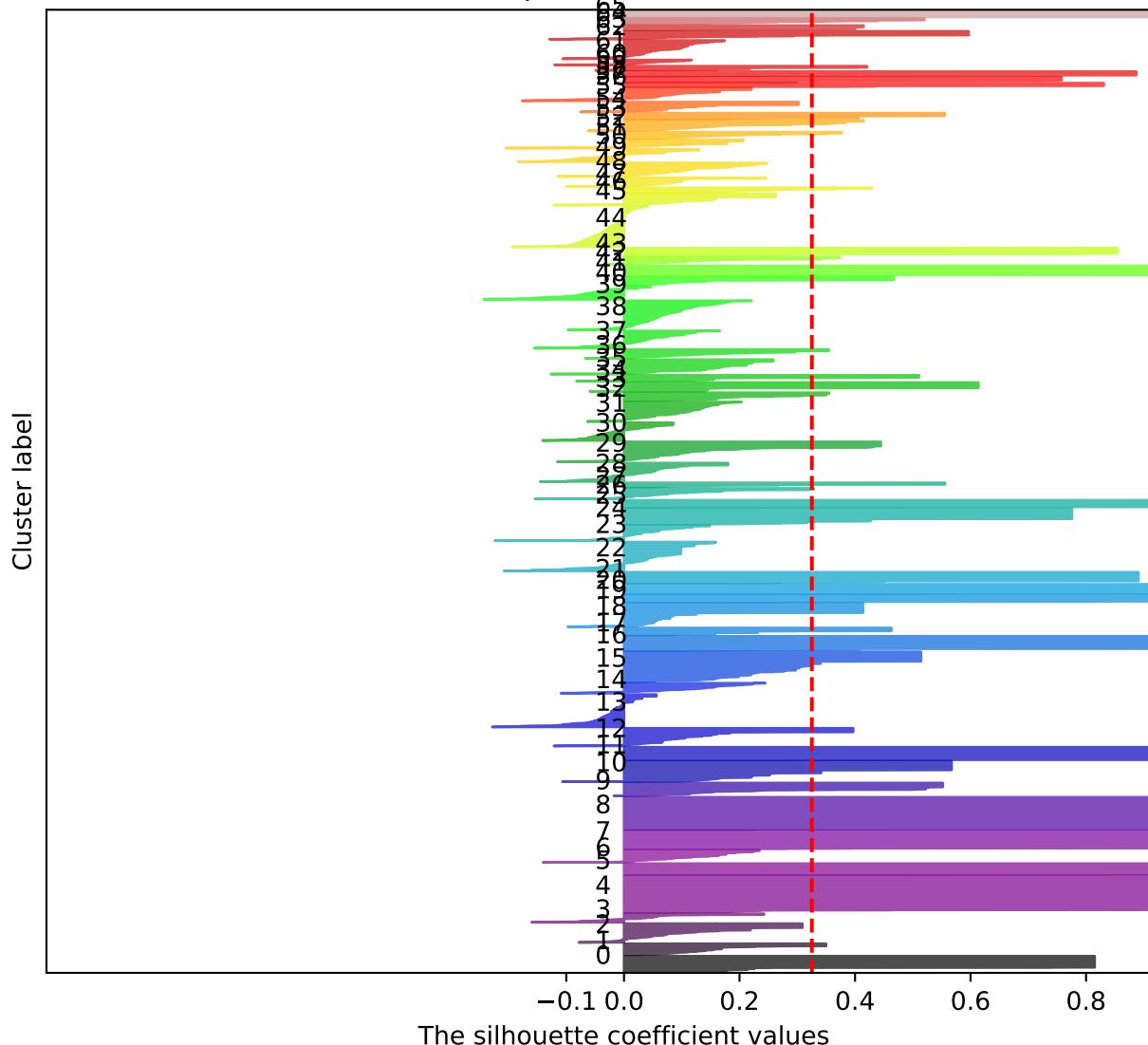


The visualization of the clustered data.

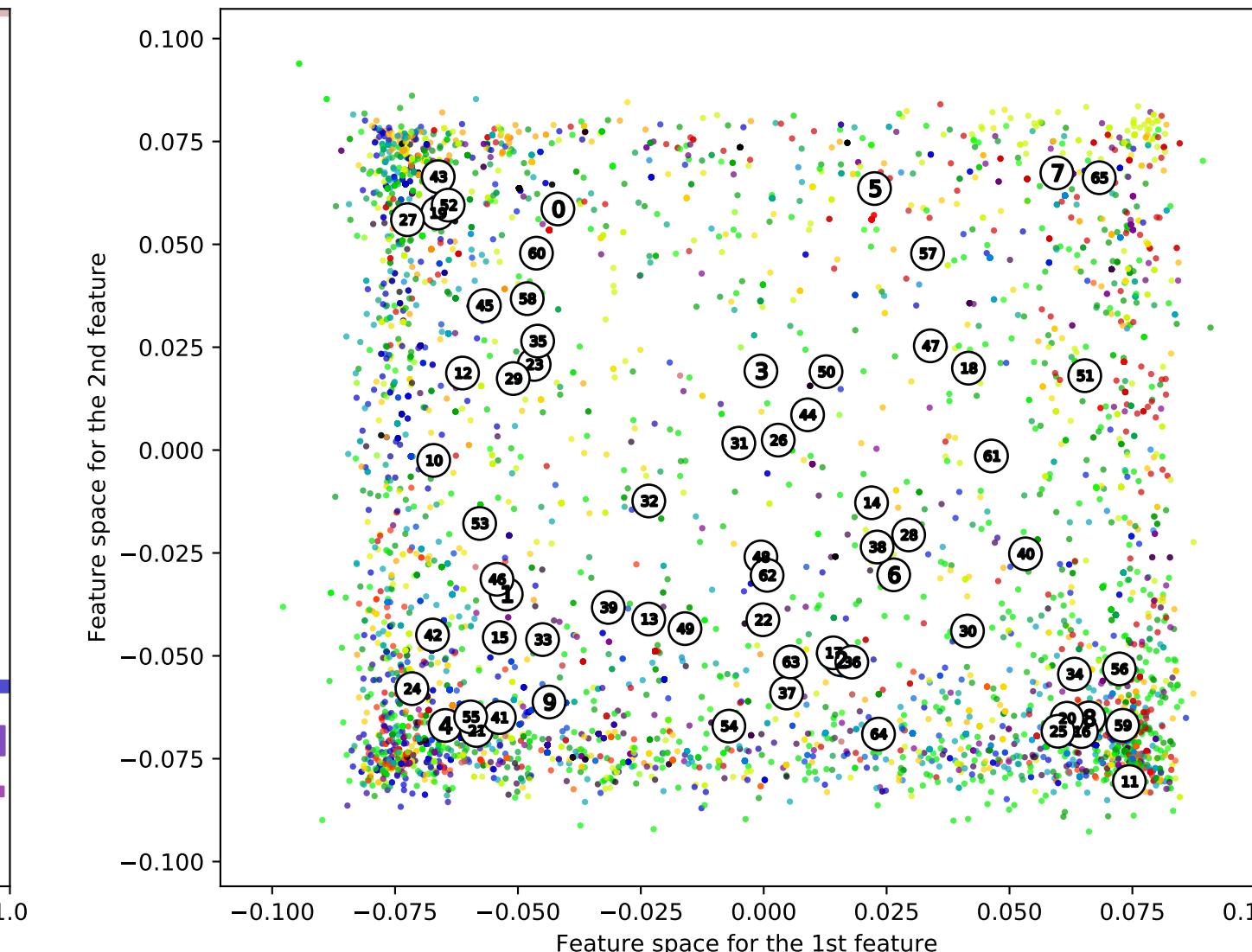


Silhouette analysis for KMeans clustering on sample data with n_clusters = 66 with Average Silhouette of: 0.3252303898334503

The silhouette plot for the various clusters.

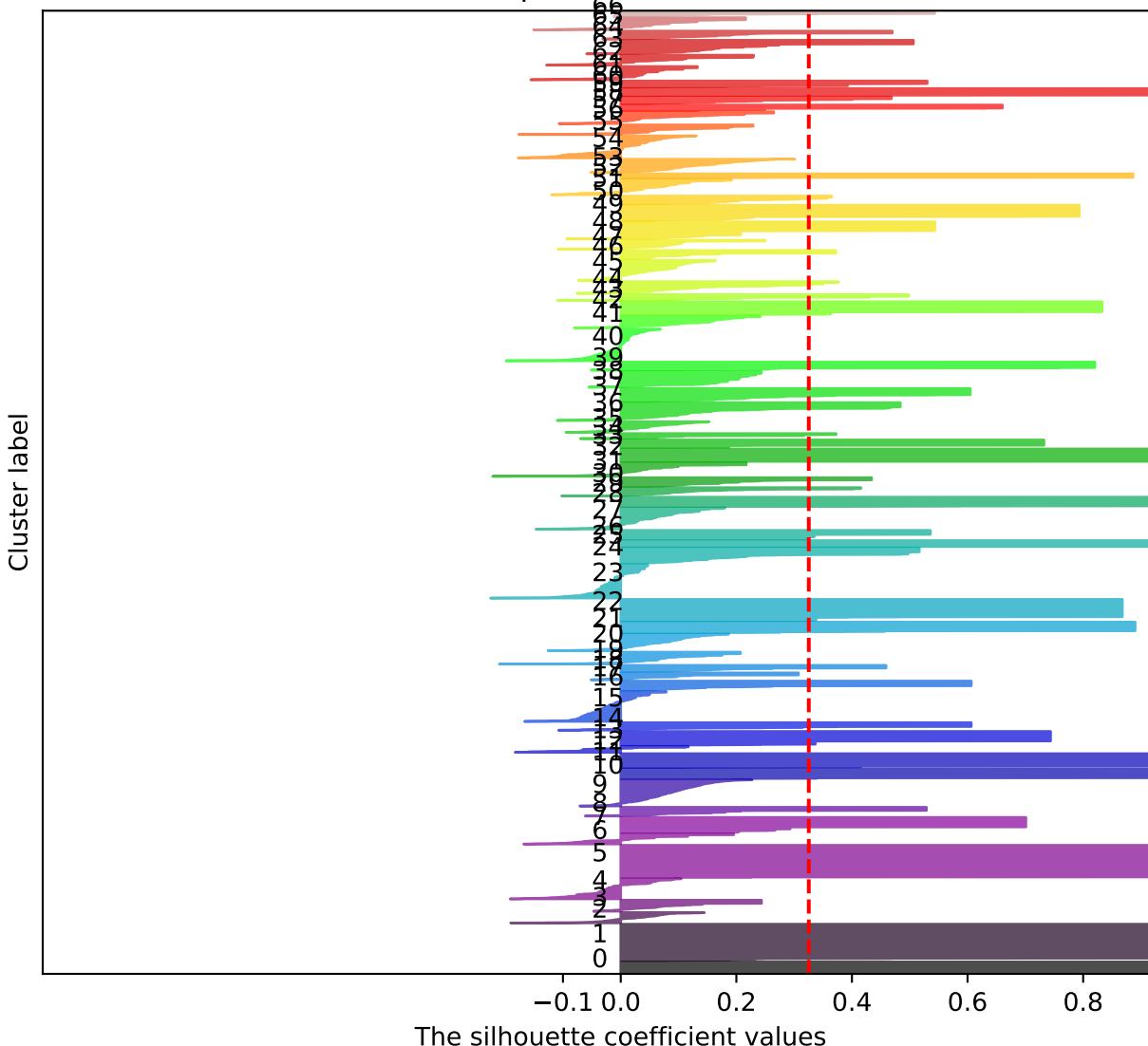


The visualization of the clustered data.

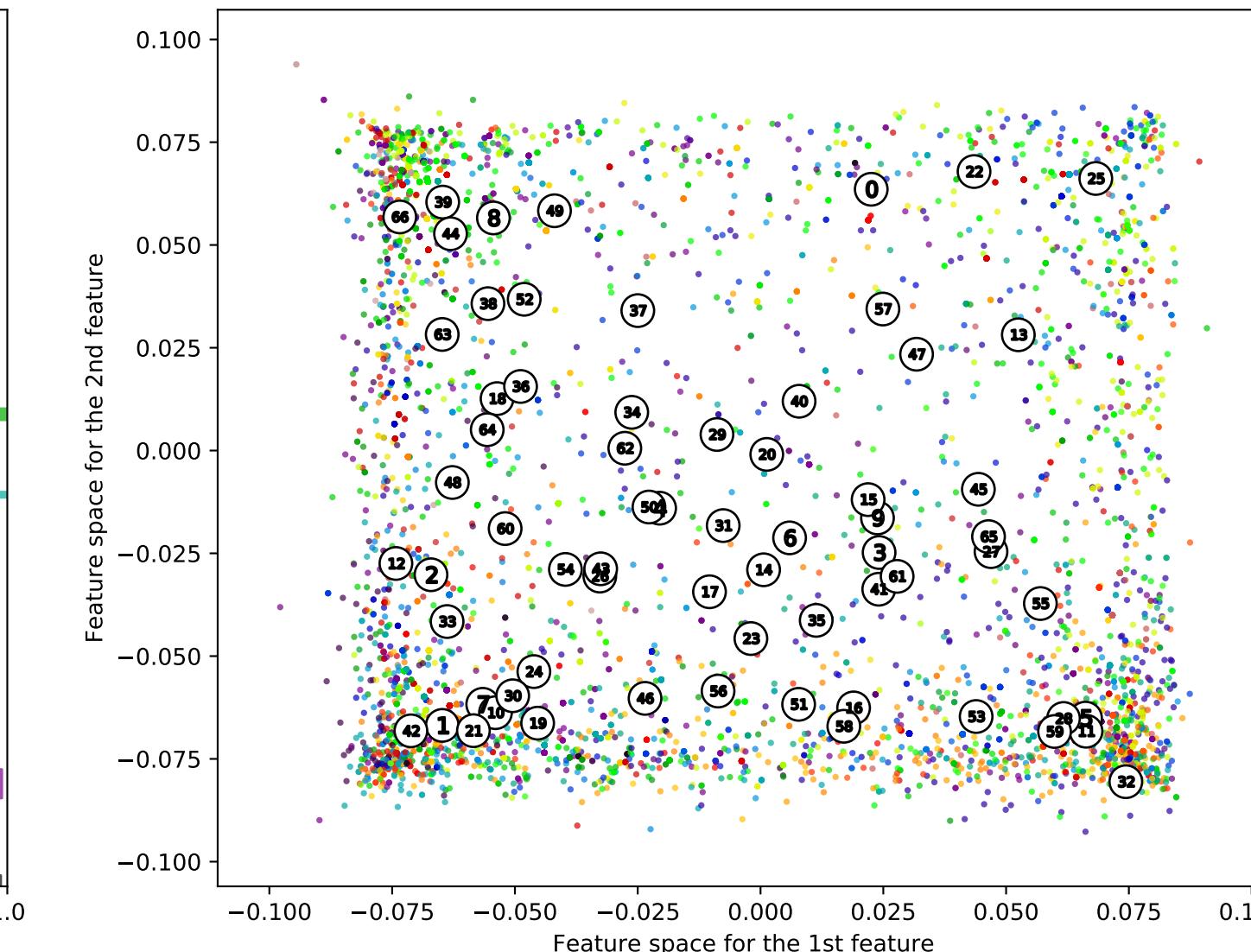


Silhouette analysis for KMeans clustering on sample data with n_clusters = 67 with Average Silhouette of: 0.3253253996372223

The silhouette plot for the various clusters.

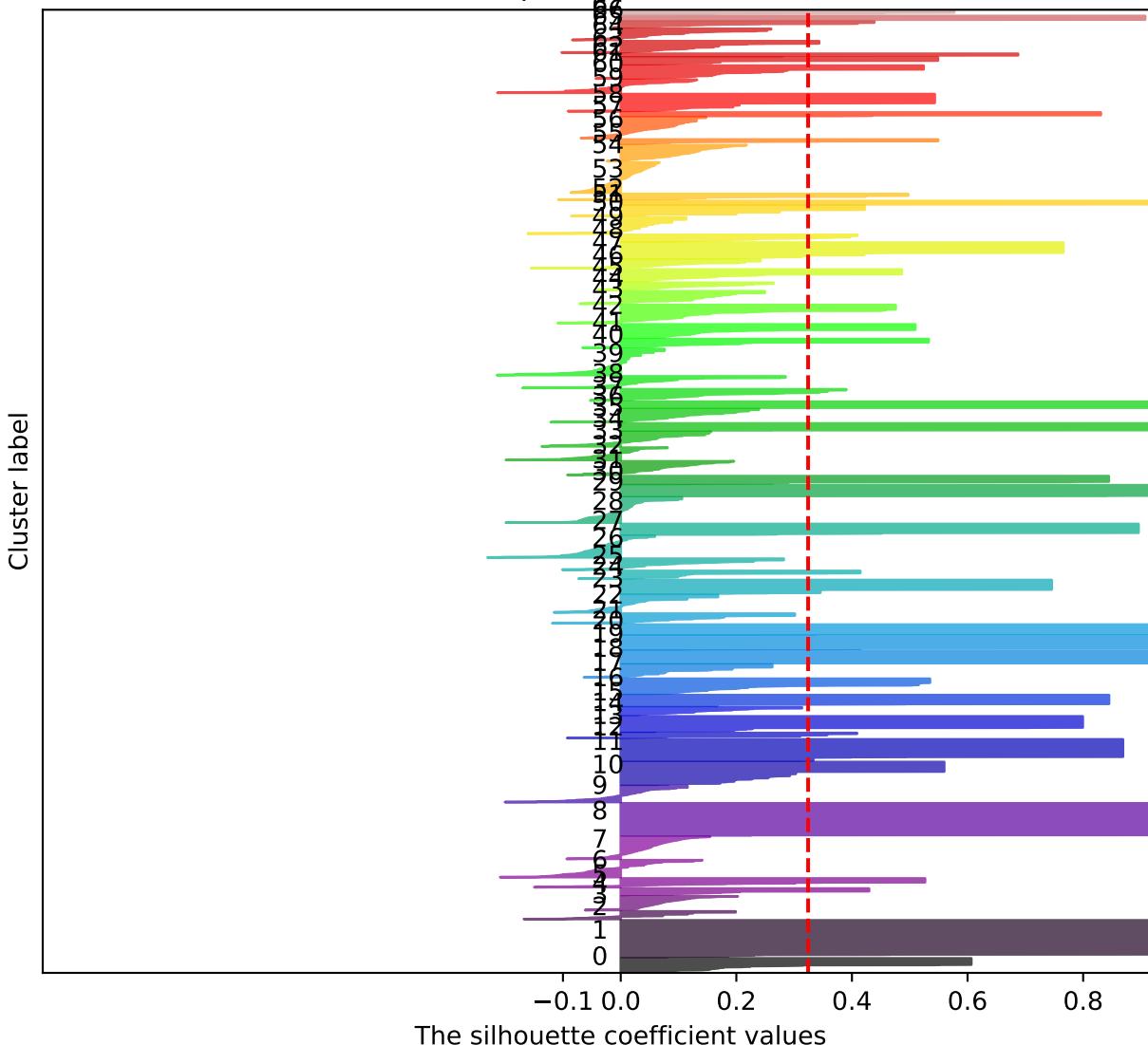


The visualization of the clustered data.

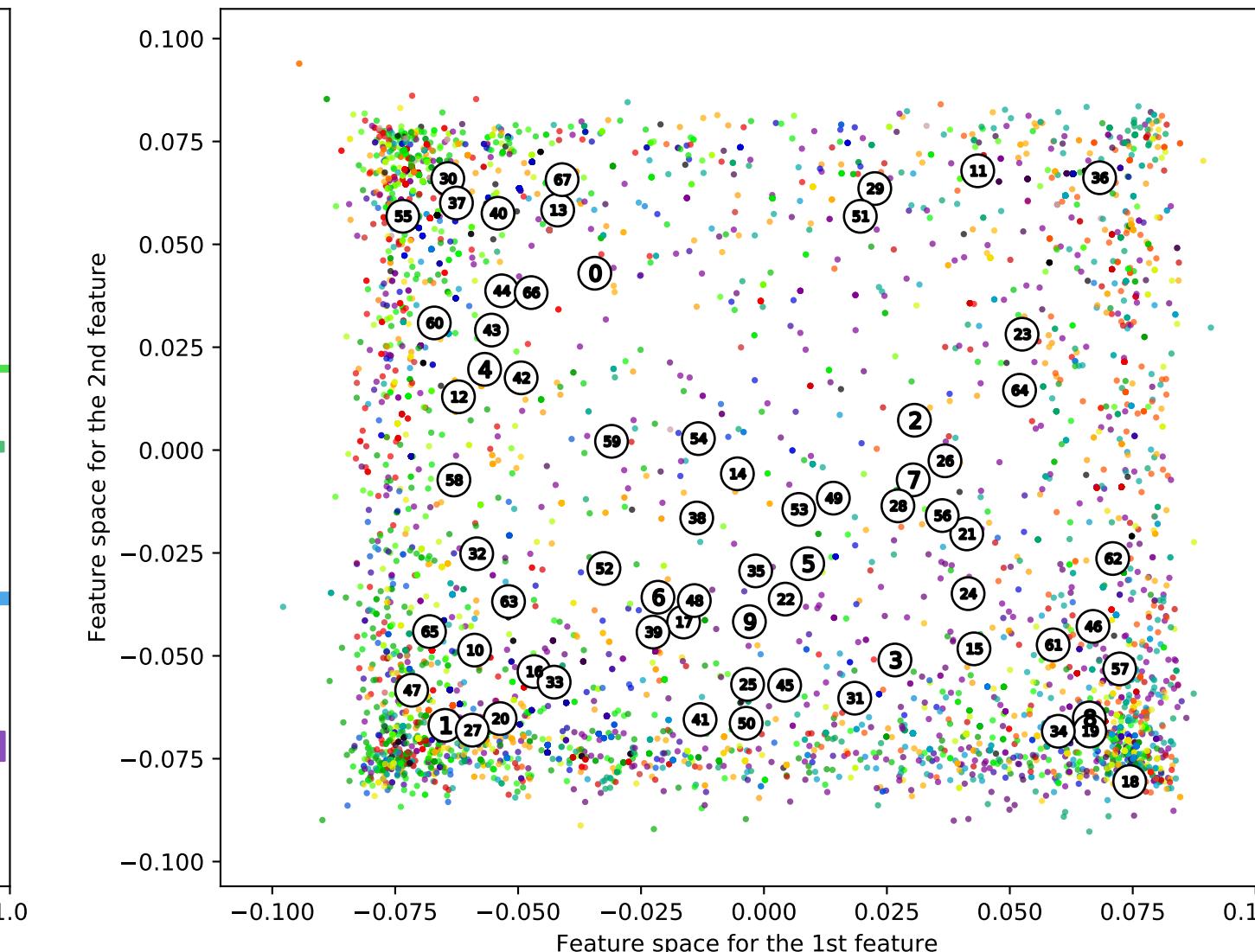


Silhouette analysis for KMeans clustering on sample data with n_clusters = 68 with Average Silhouette of: 0.3241655230522156

The silhouette plot for the various clusters.

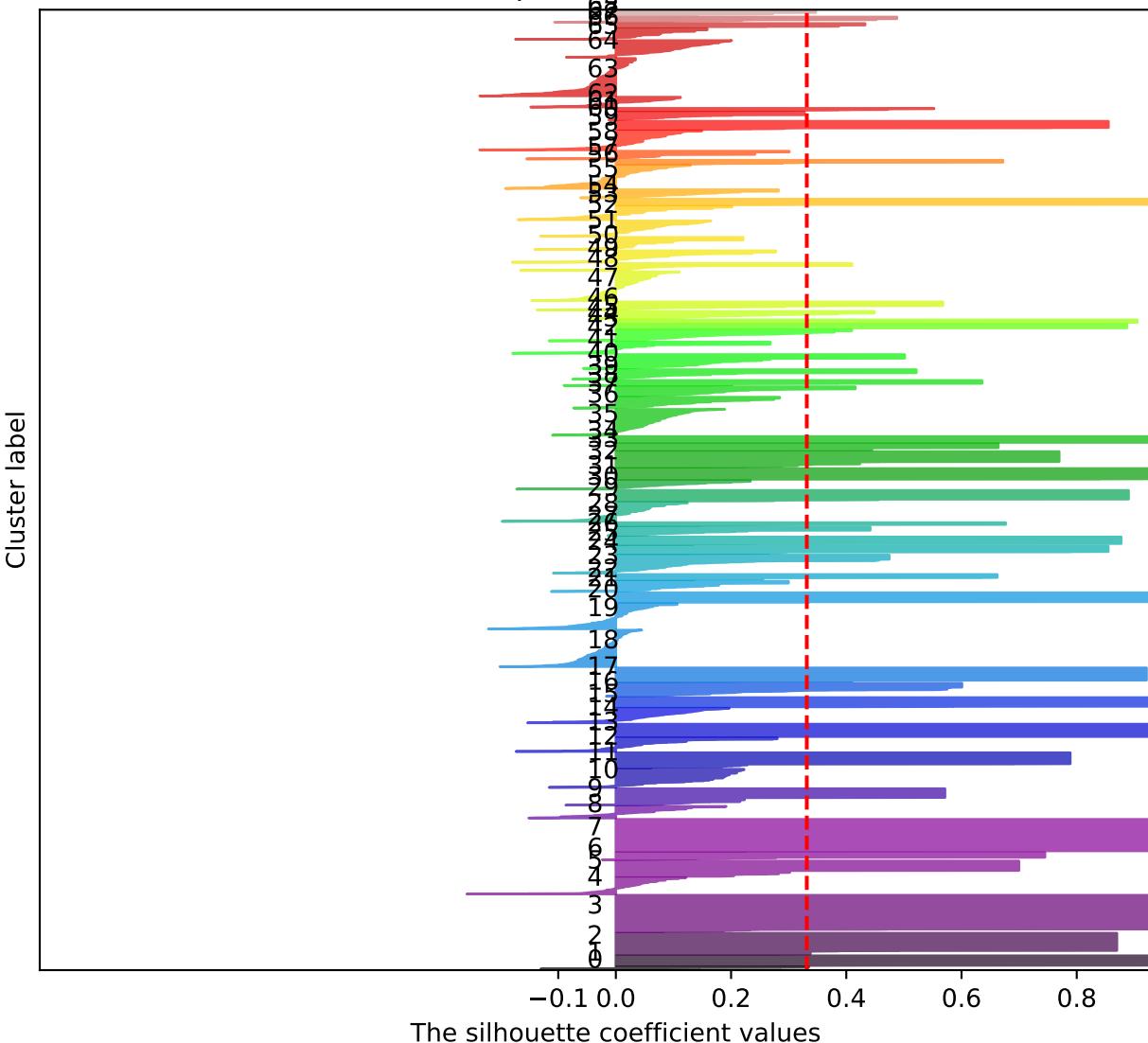


The visualization of the clustered data.

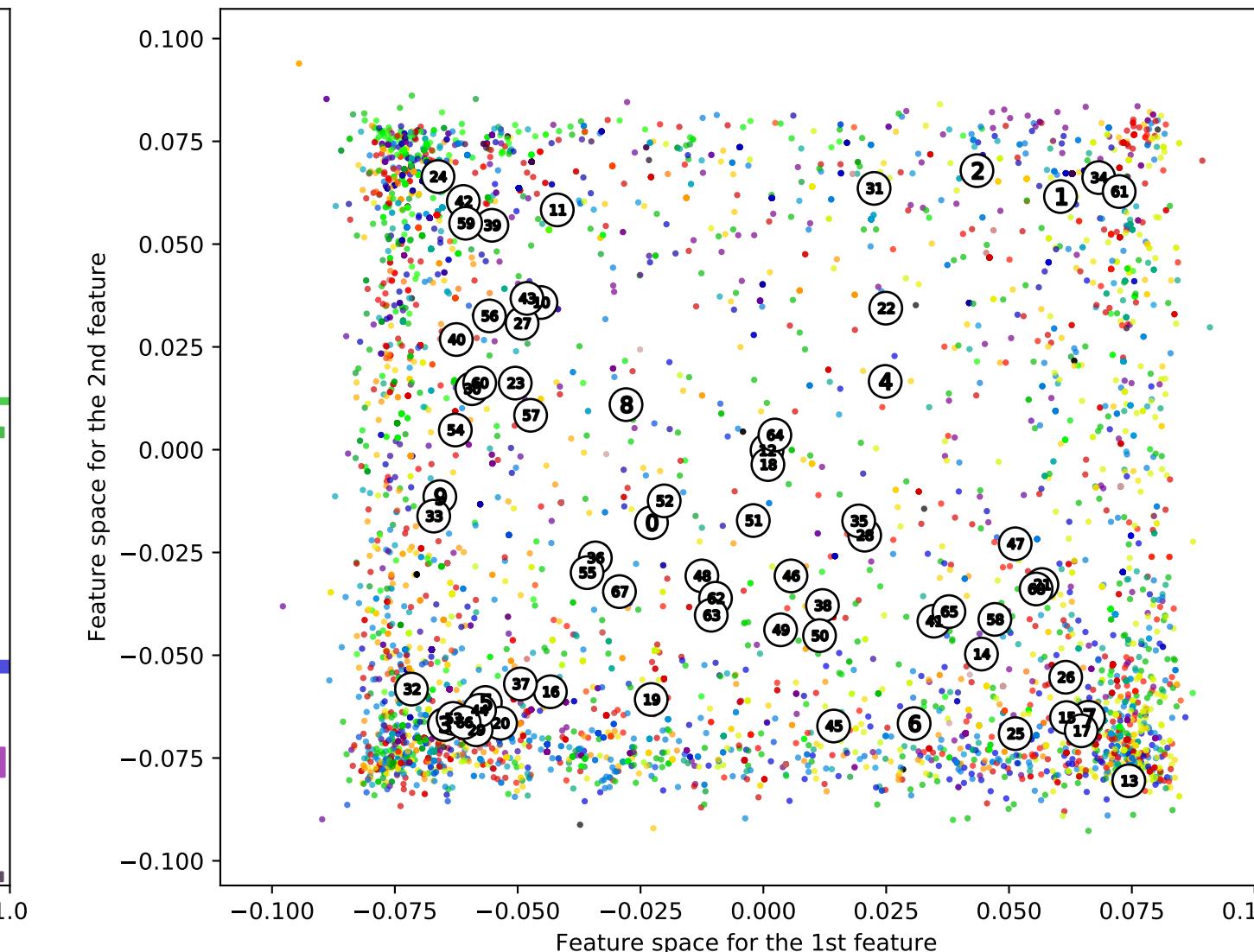


Silhouette analysis for KMeans clustering on sample data with n_clusters = 69 with Average Silhouette of: 0.33145880699157715

The silhouette plot for the various clusters.

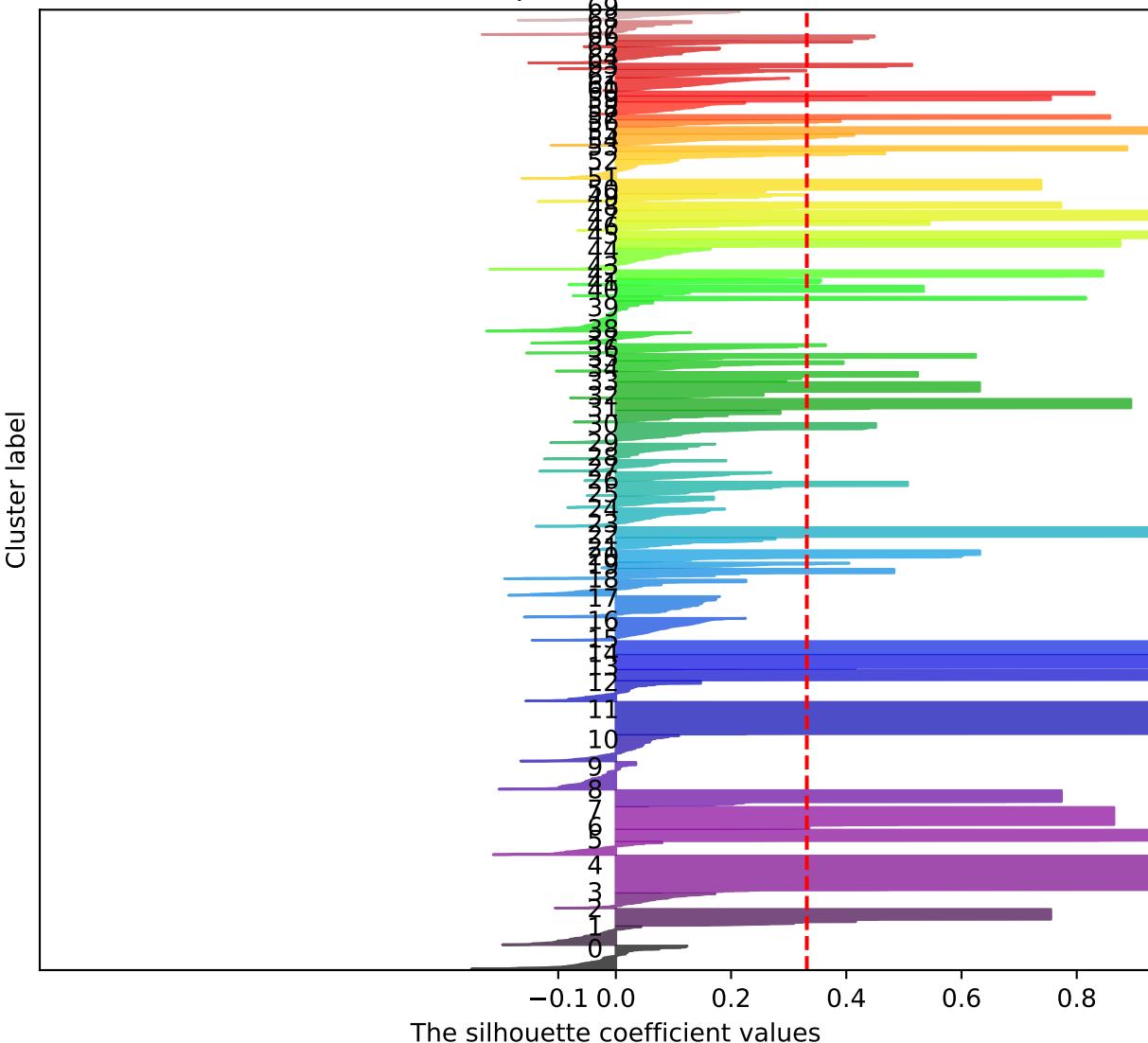


The visualization of the clustered data.

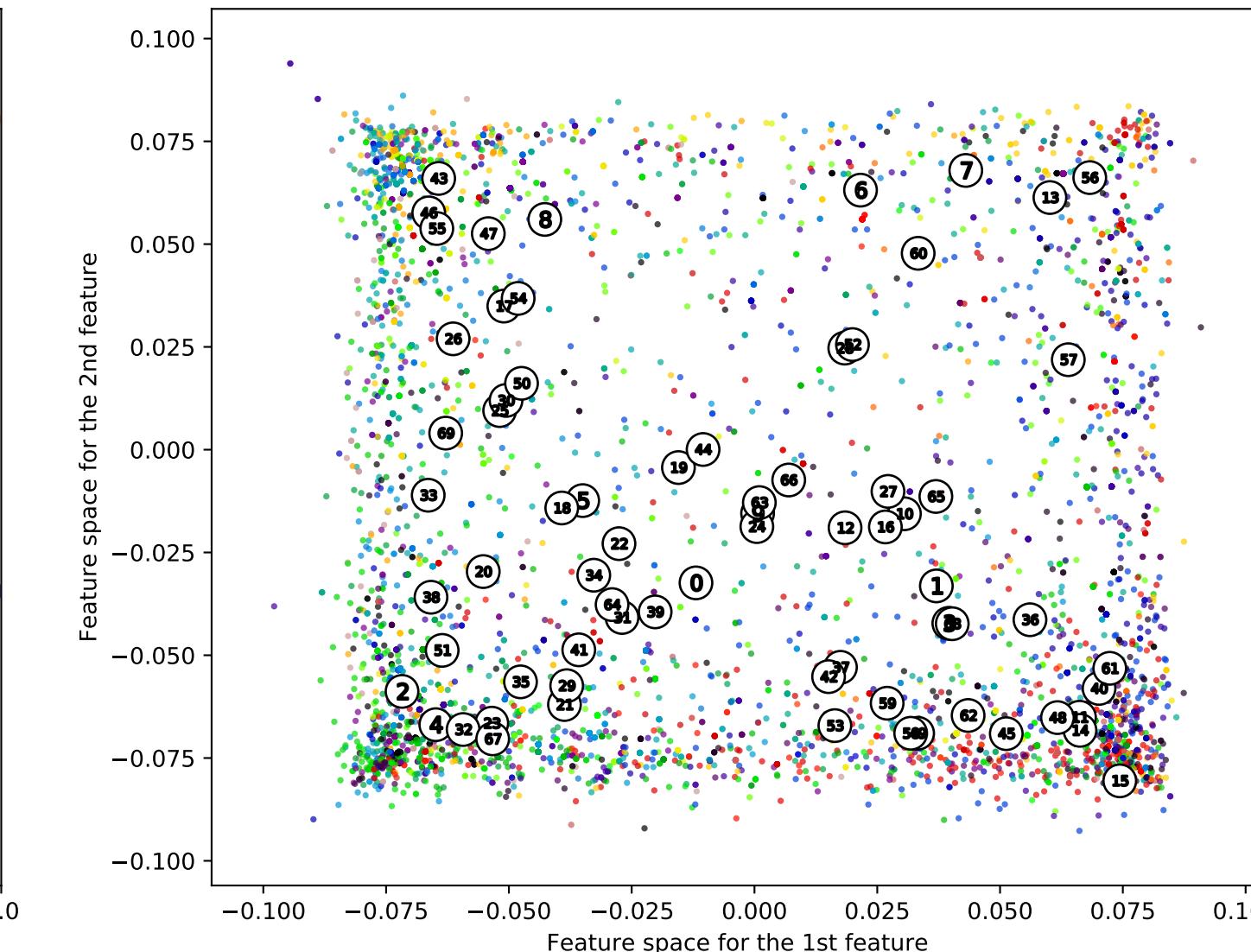


Silhouette analysis for KMeans clustering on sample data with n_clusters = 70 with Average Silhouette of: 0.33150917291641235

The silhouette plot for the various clusters.

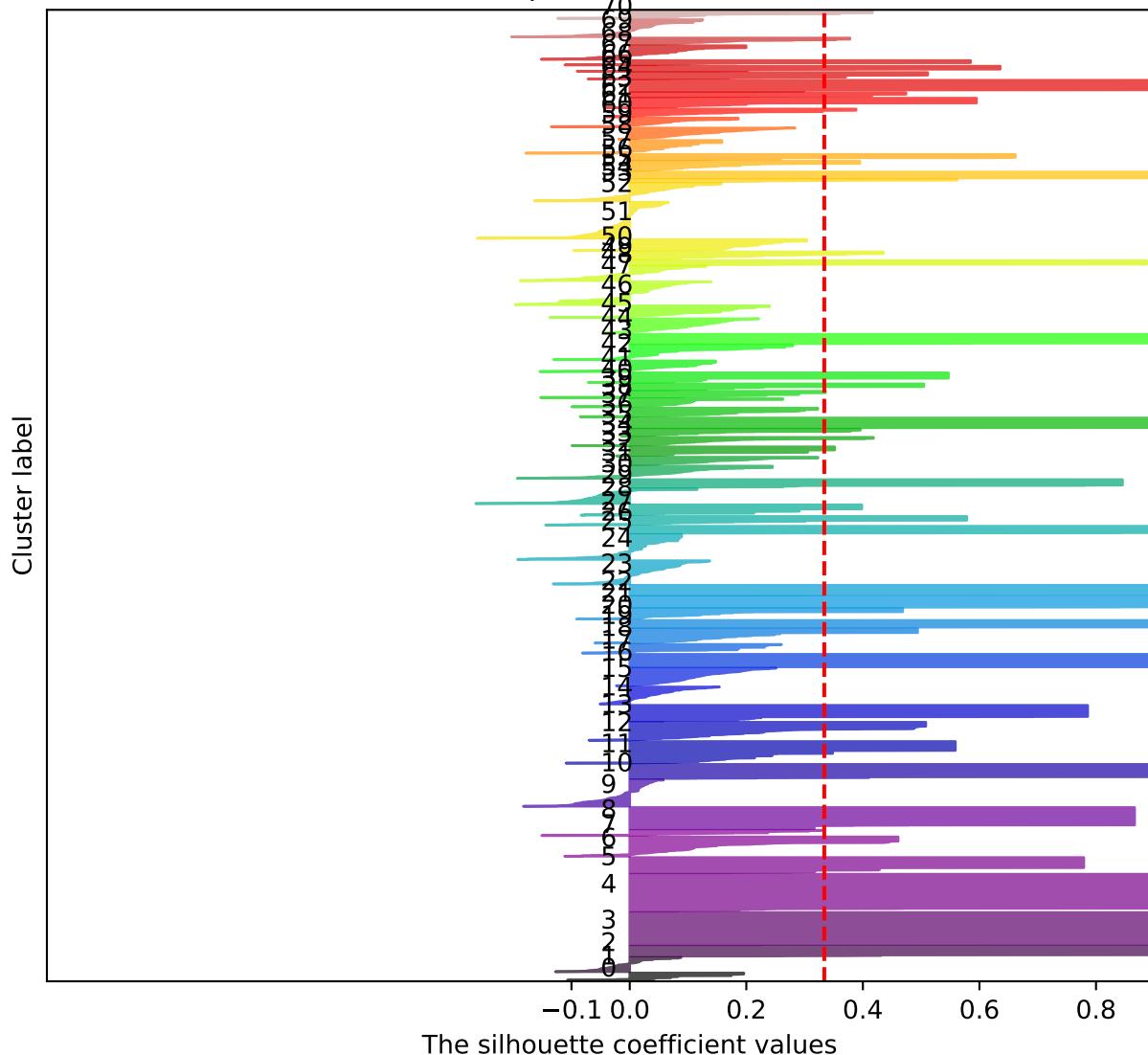


The visualization of the clustered data.

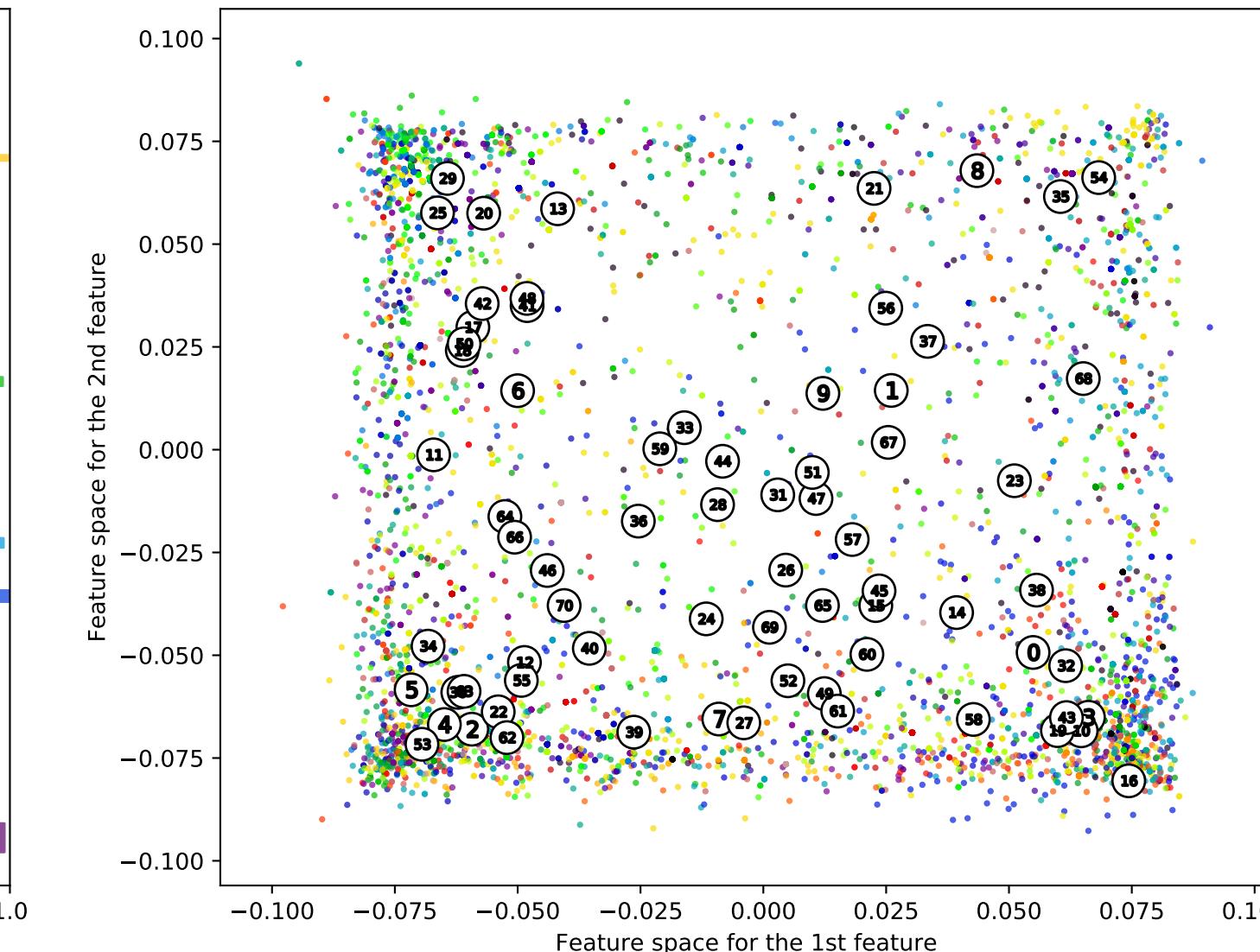


Silhouette analysis for KMeans clustering on sample data with n_clusters = 71 with Average Silhouette of: 0.33378687500953674

The silhouette plot for the various clusters.

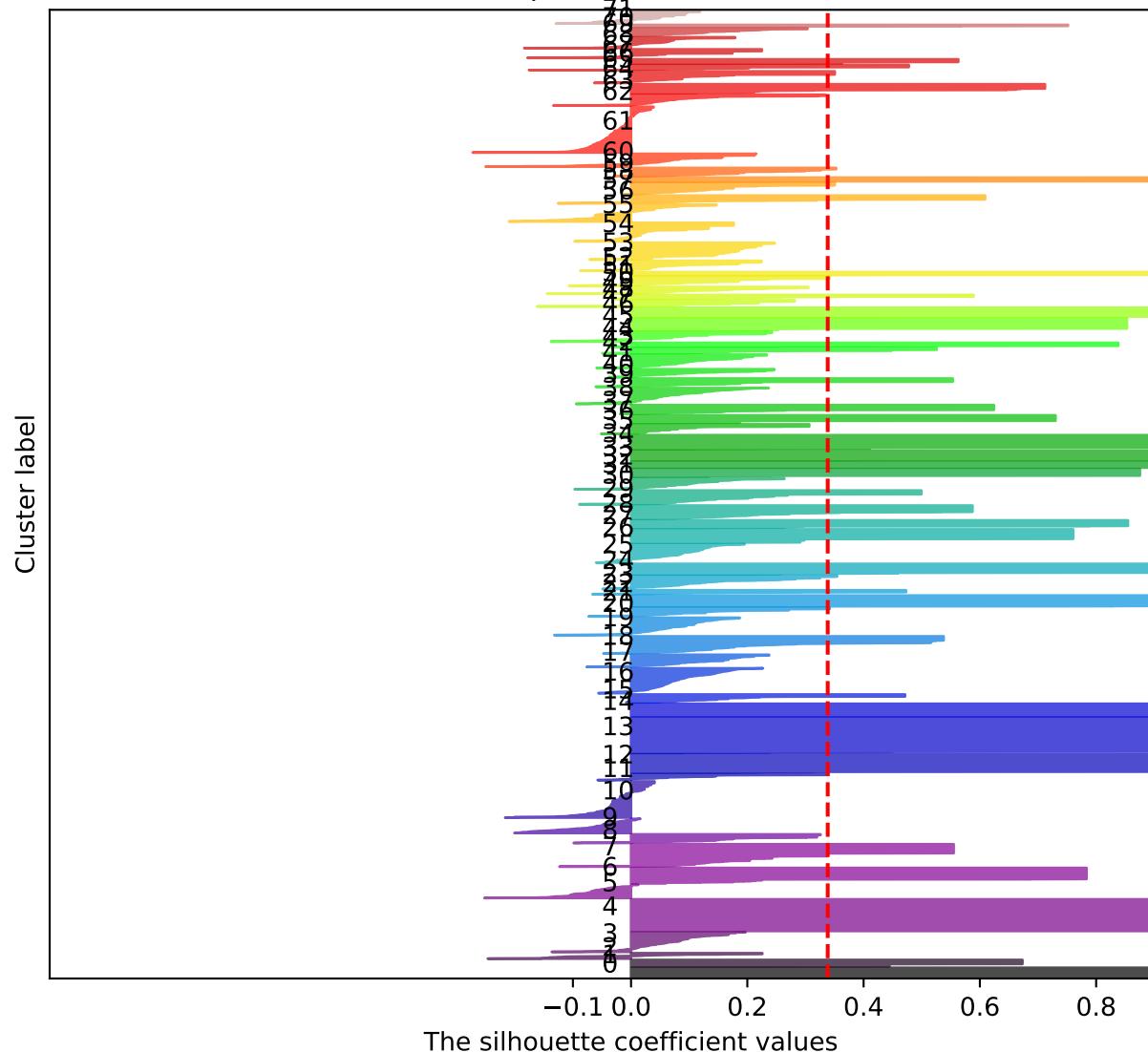


The visualization of the clustered data.

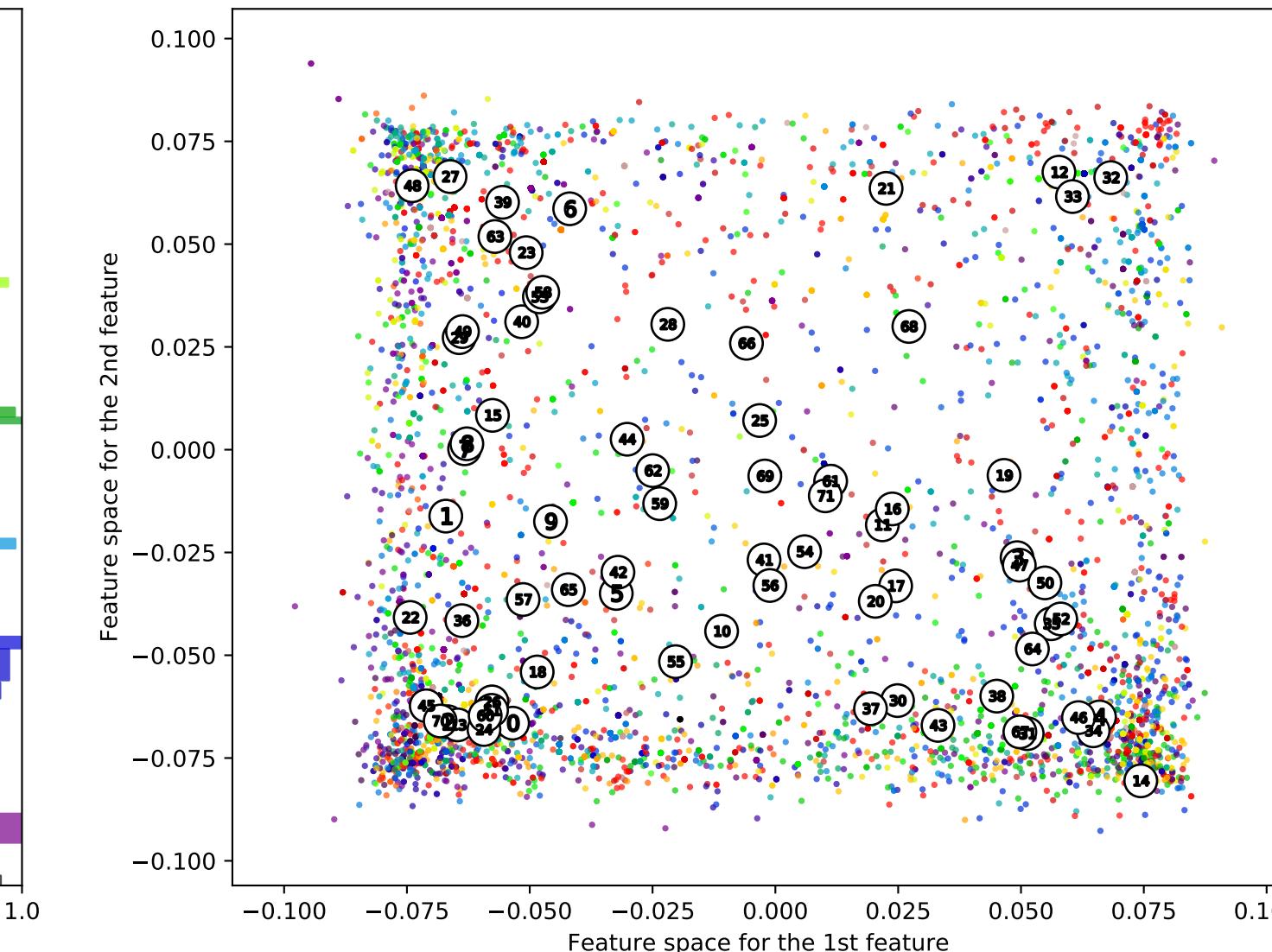


Silhouette analysis for KMeans clustering on sample data with n_clusters = 72 with Average Silhouette of: 0.33833351731300354

The silhouette plot for the various clusters.

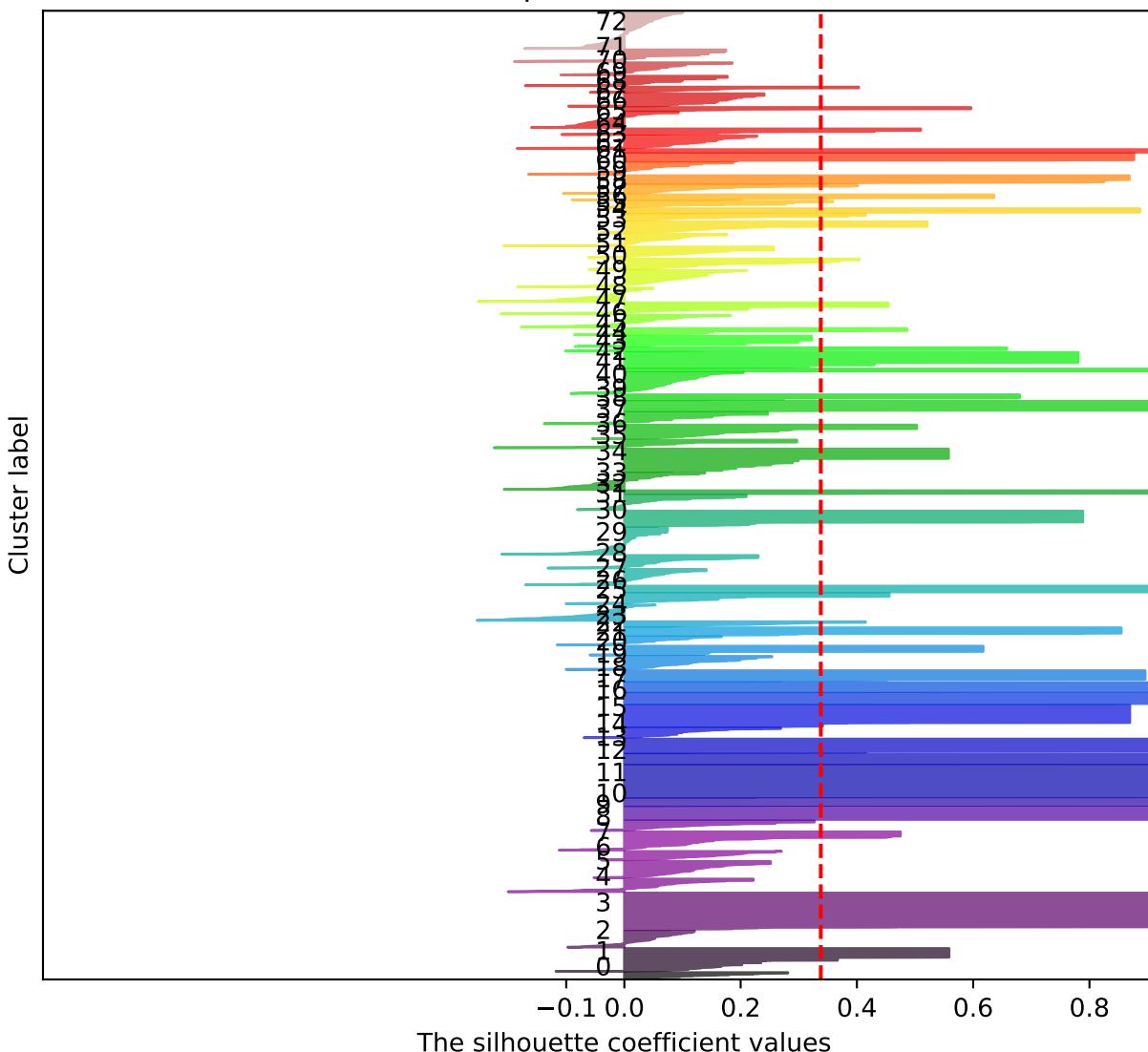


The visualization of the clustered data.

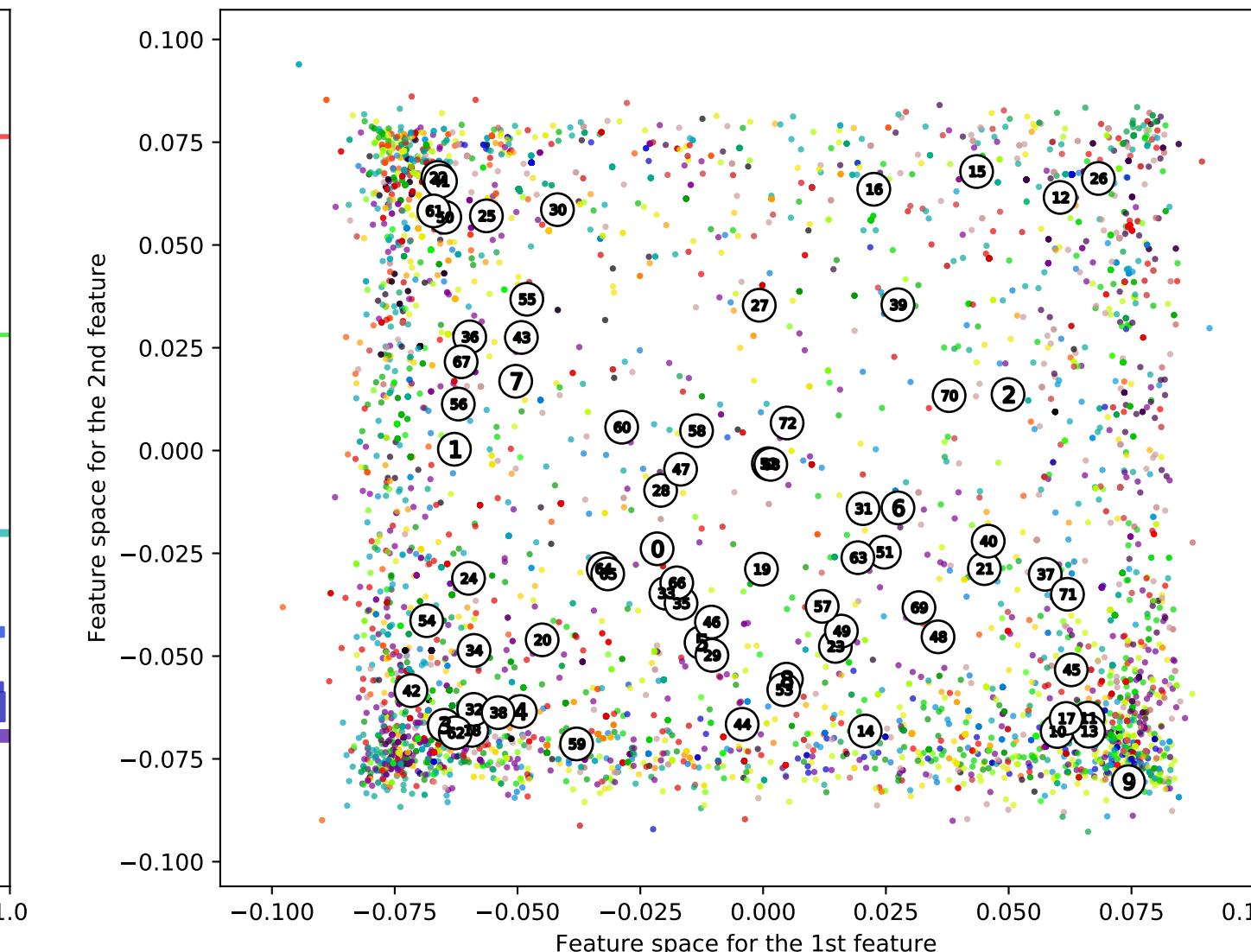


Silhouette analysis for KMeans clustering on sample data with n_clusters = 73 with Average Silhouette of: 0.3378397226333618

The silhouette plot for the various clusters.

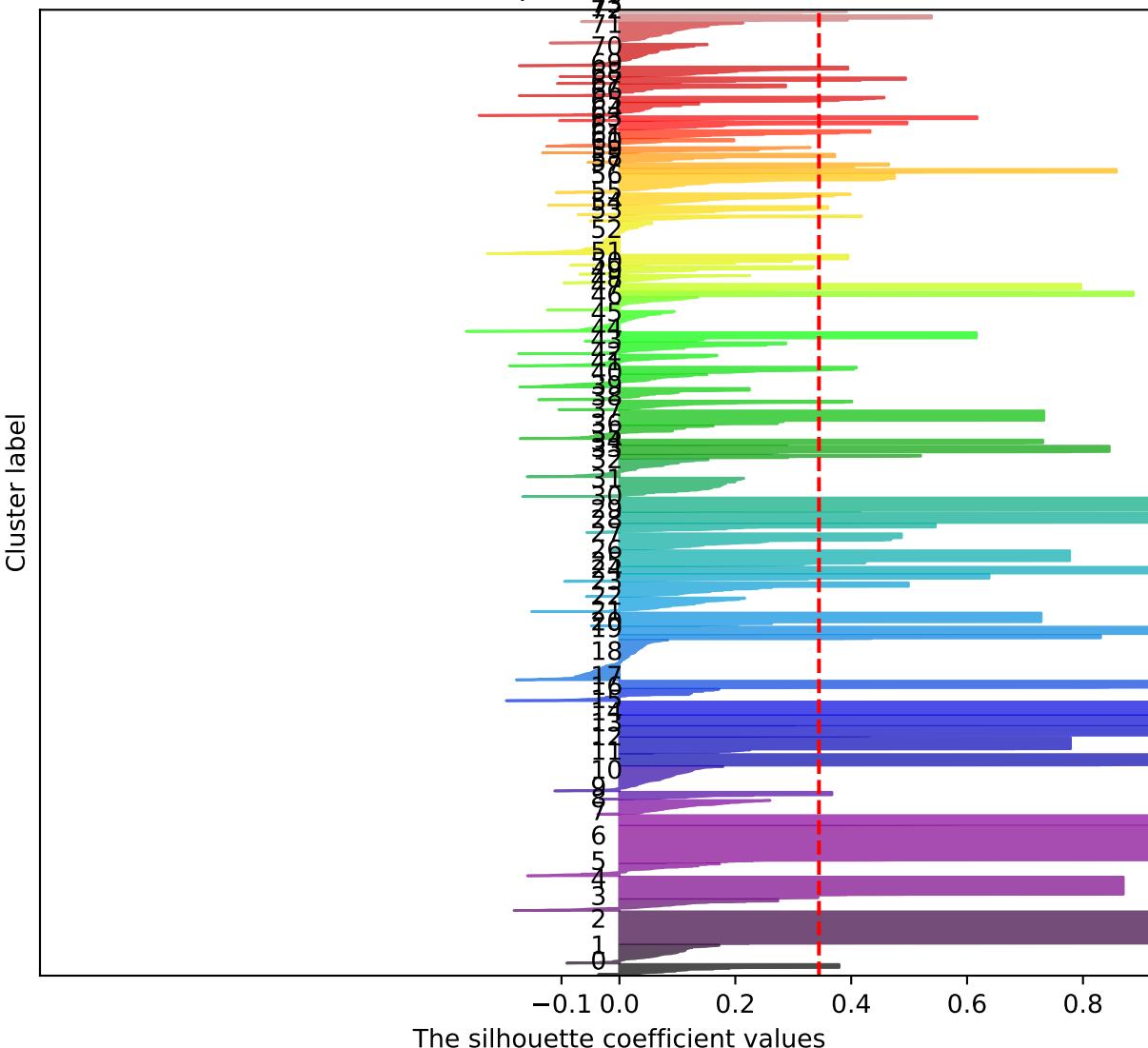


The visualization of the clustered data.

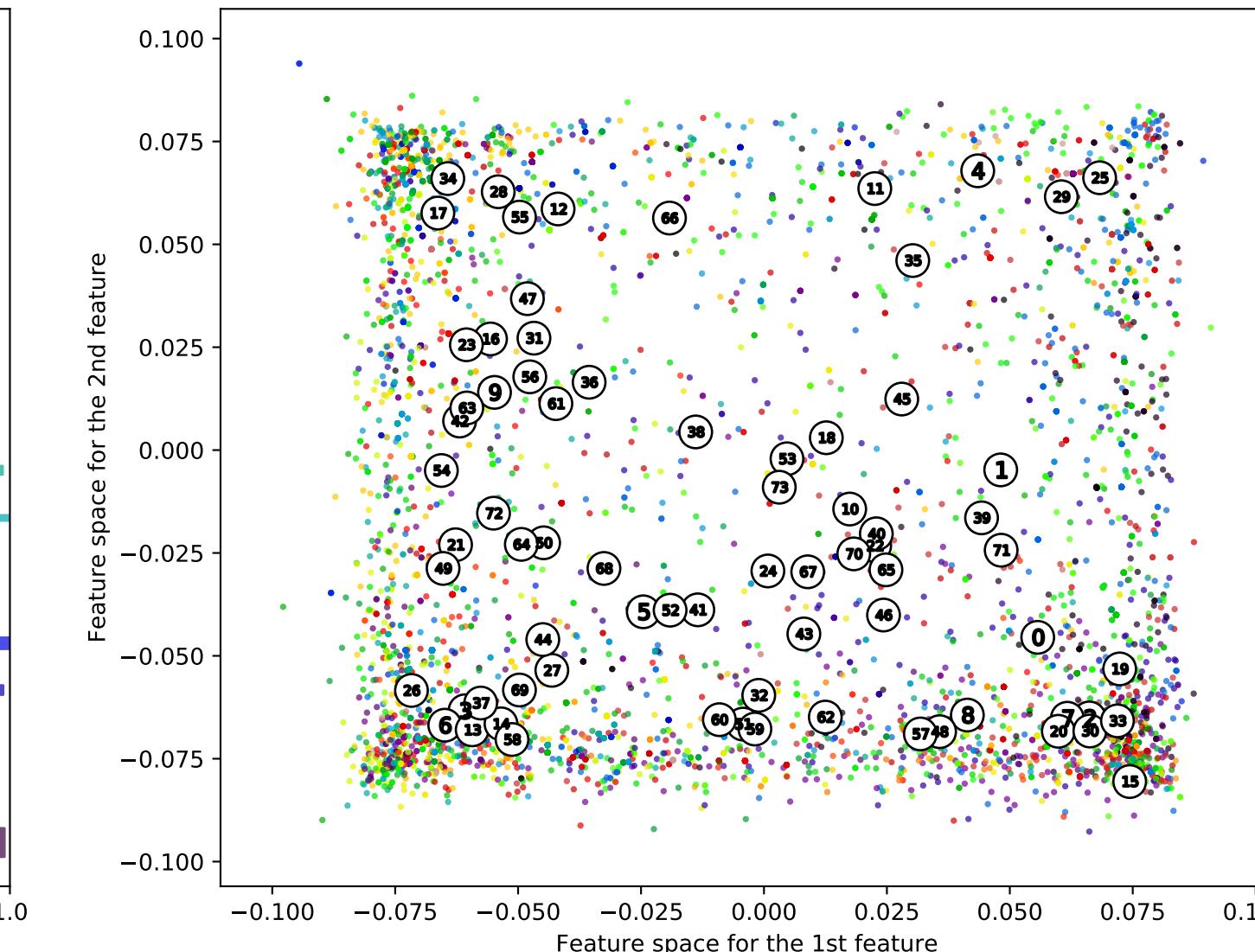


Silhouette analysis for KMeans clustering on sample data with n_clusters = 74 with Average Silhouette of: 0.3443841338157654

The silhouette plot for the various clusters.

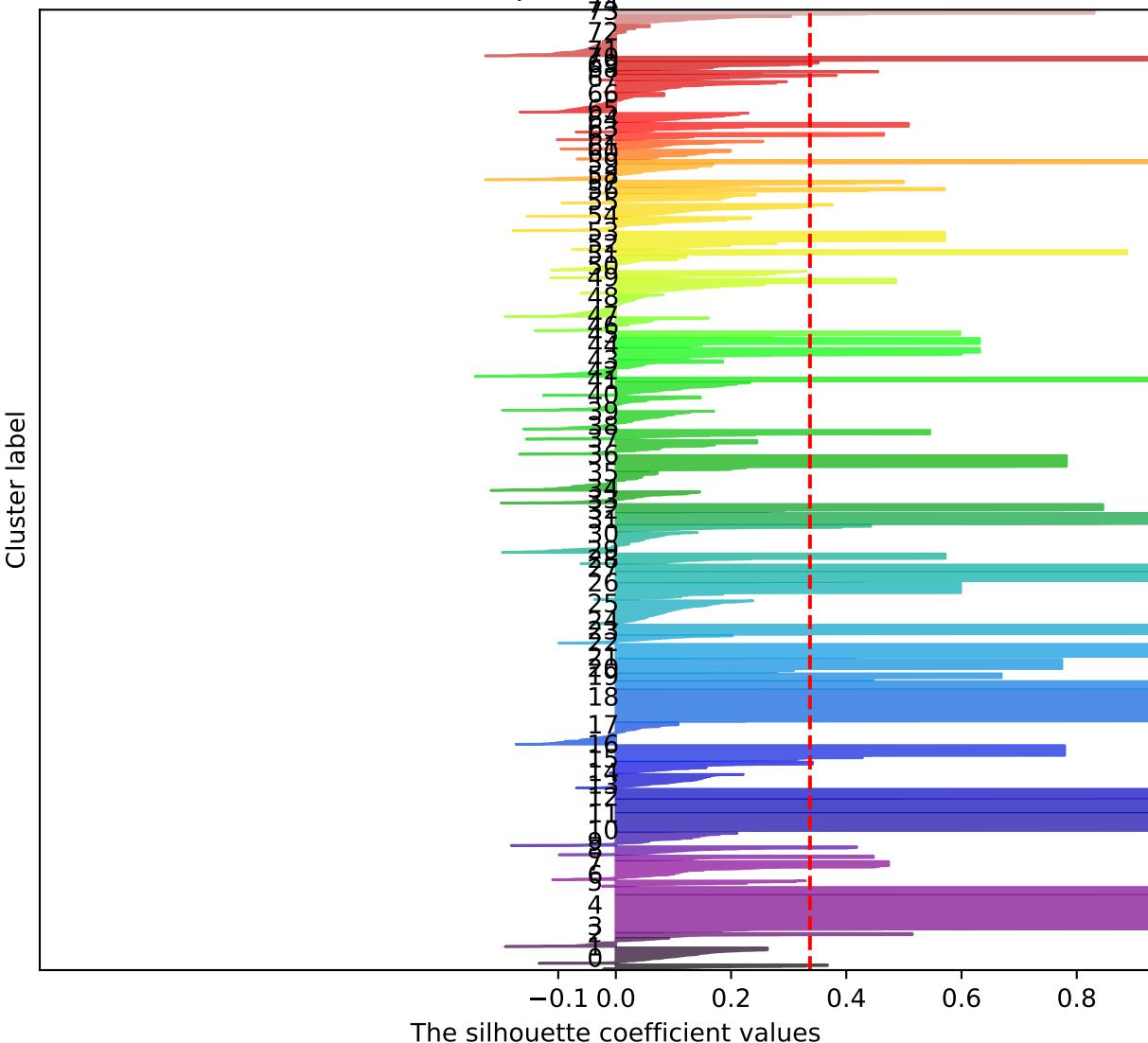


The visualization of the clustered data.

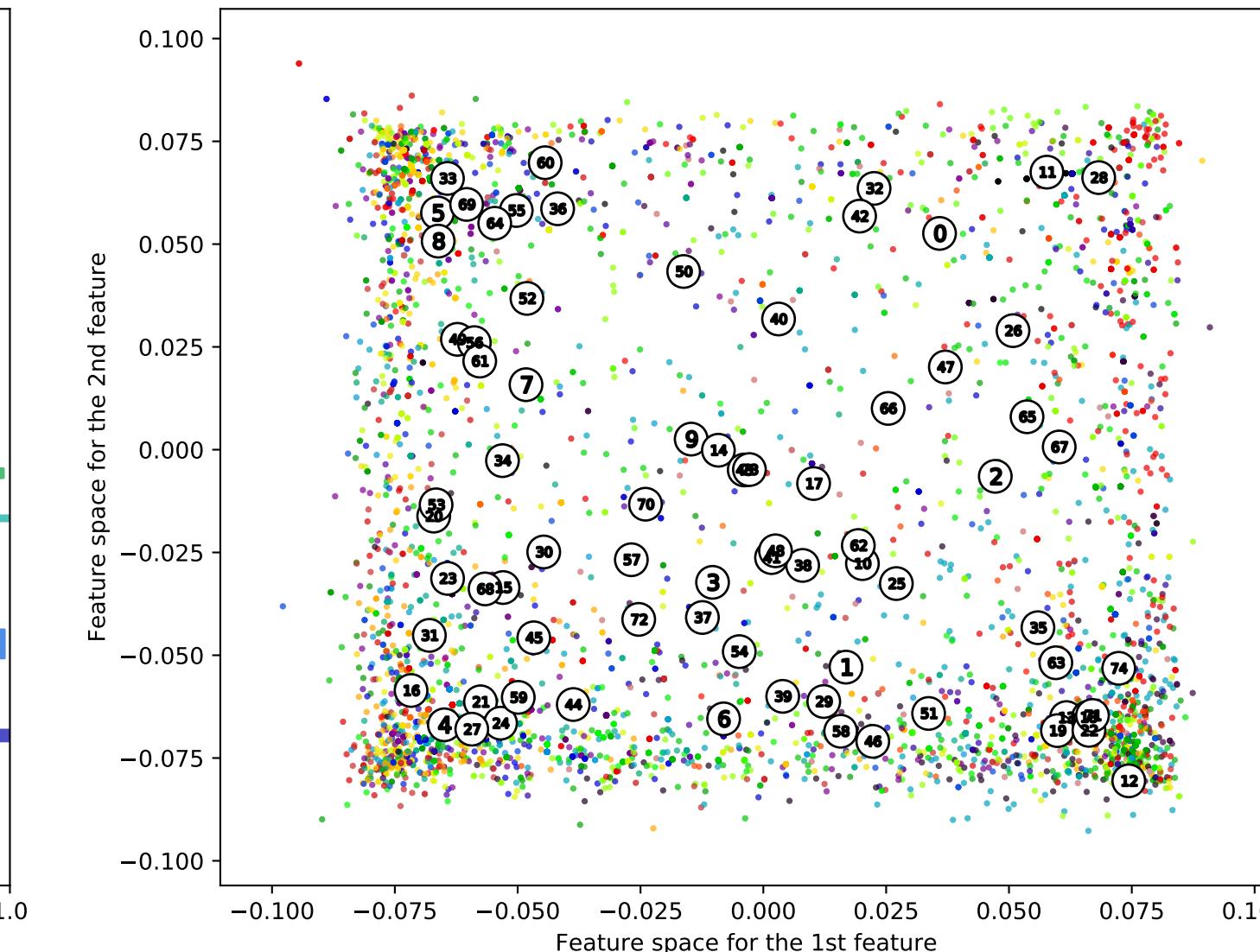


Silhouette analysis for KMeans clustering on sample data with n_clusters = 75 with Average Silhouette of: 0.33694228529930115

The silhouette plot for the various clusters.

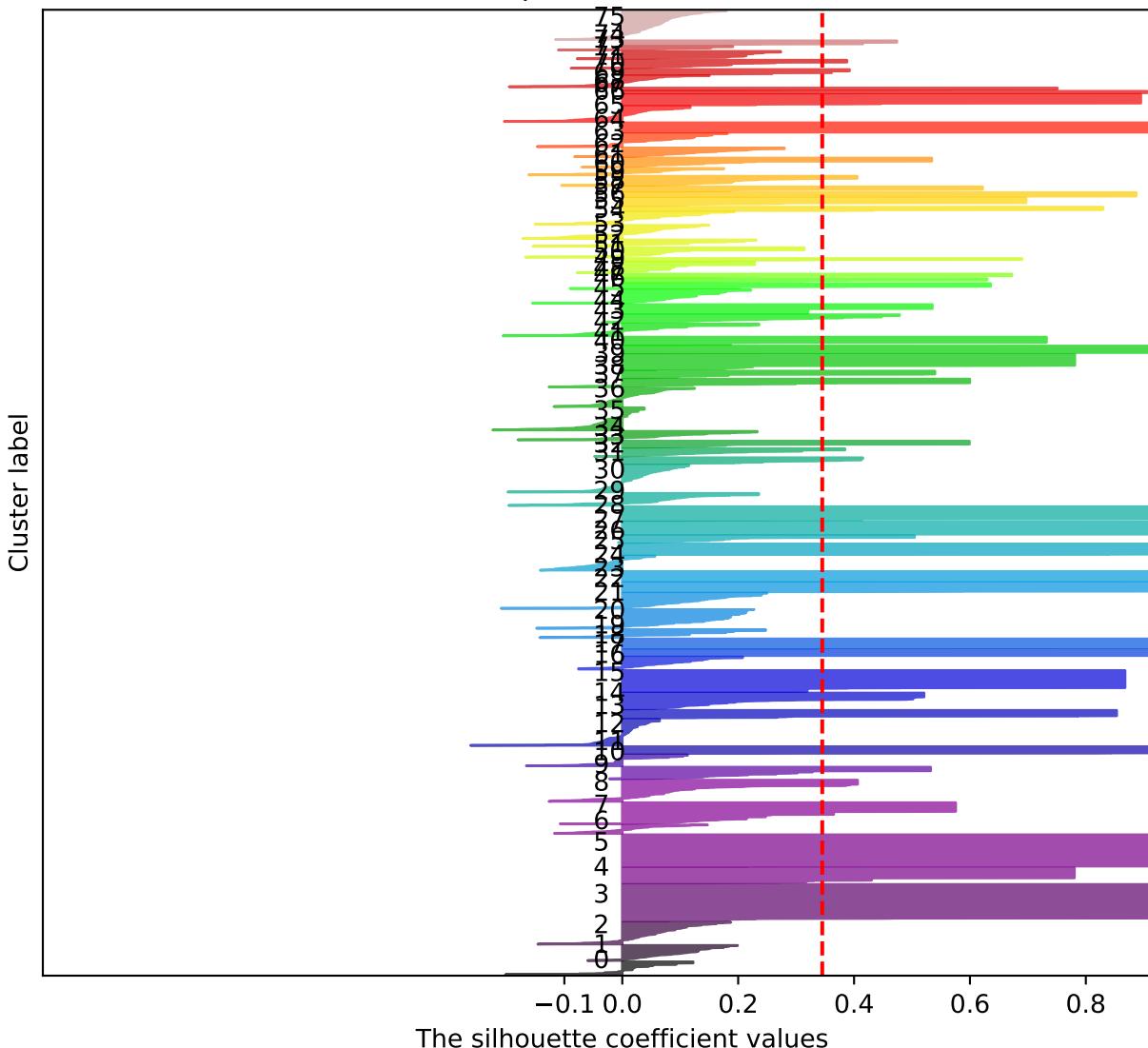


The visualization of the clustered data.

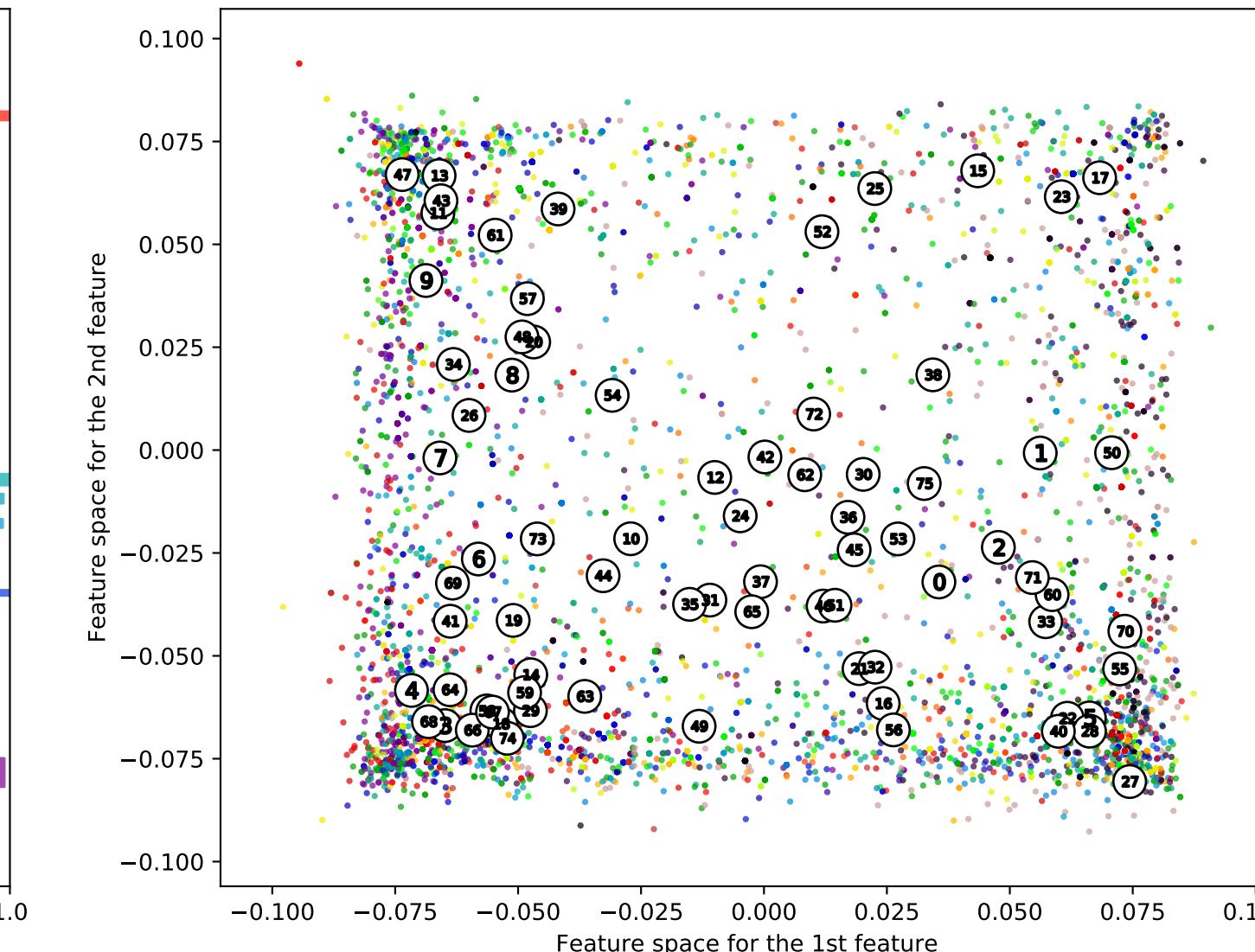


Silhouette analysis for KMeans clustering on sample data with n_clusters = 76 with Average Silhouette of: 0.3450792729854584

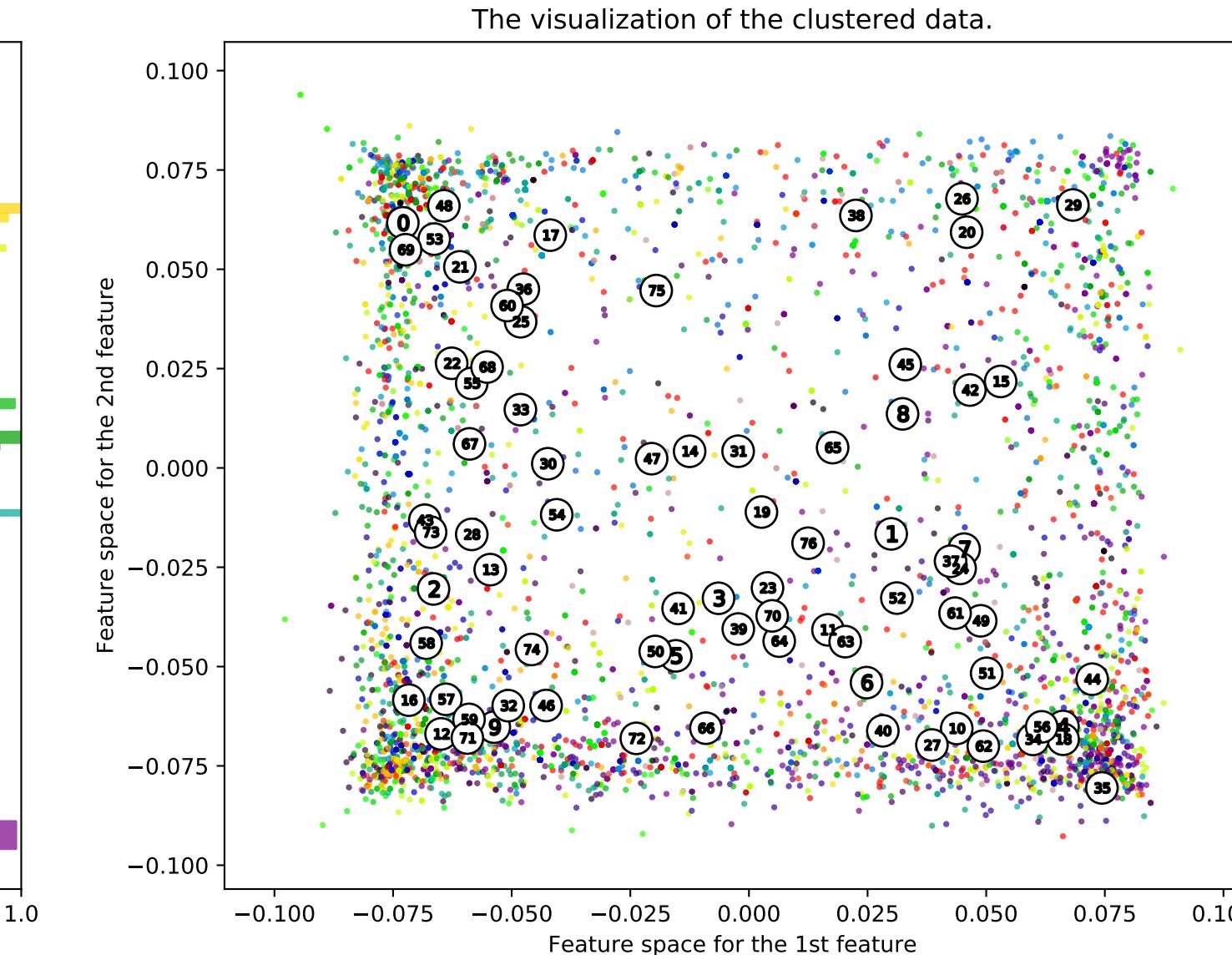
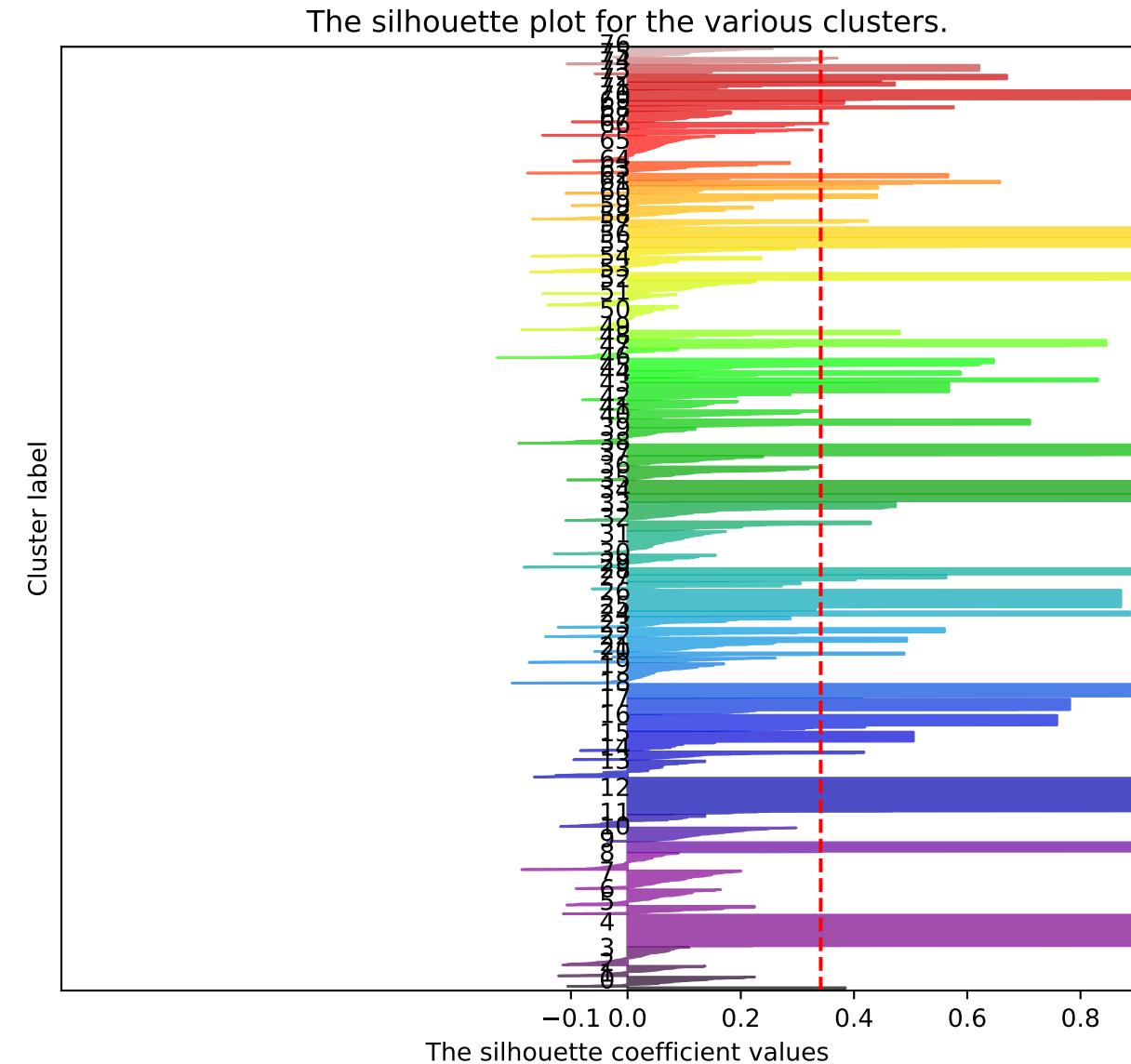
The silhouette plot for the various clusters.



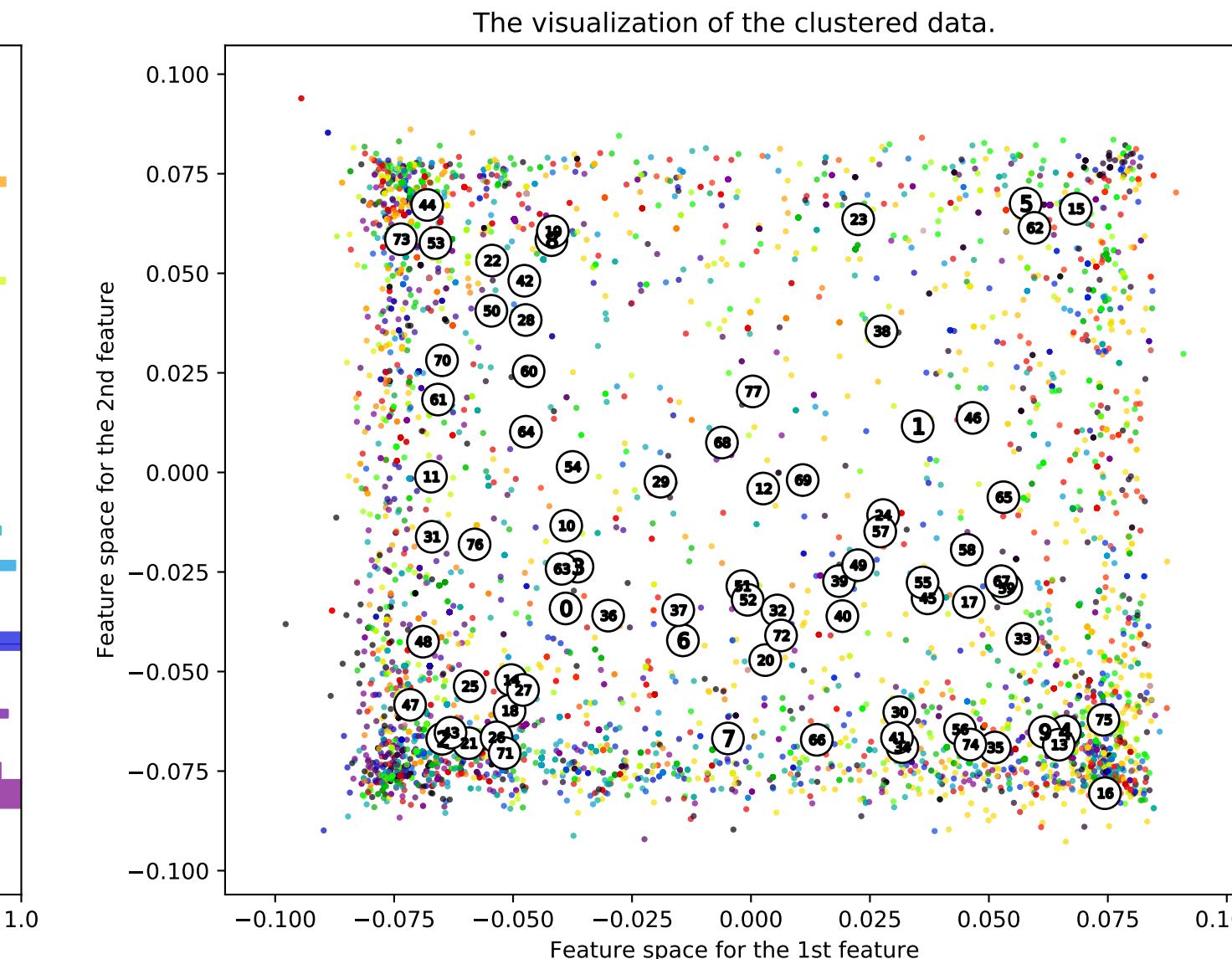
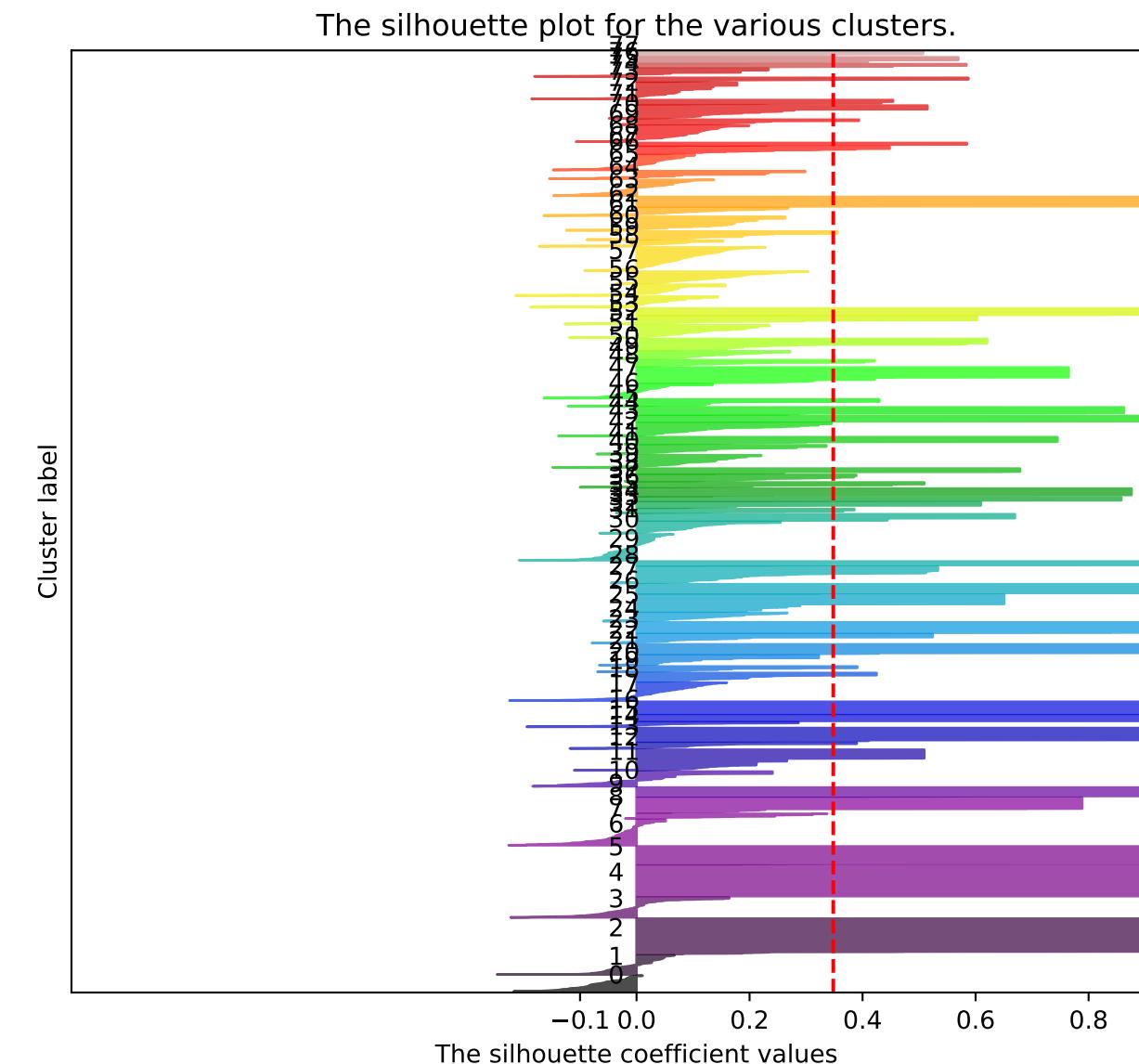
The visualization of the clustered data.



Silhouette analysis for KMeans clustering on sample data with n_clusters = 77 with Average Silhouette of: 0.34122419357299805

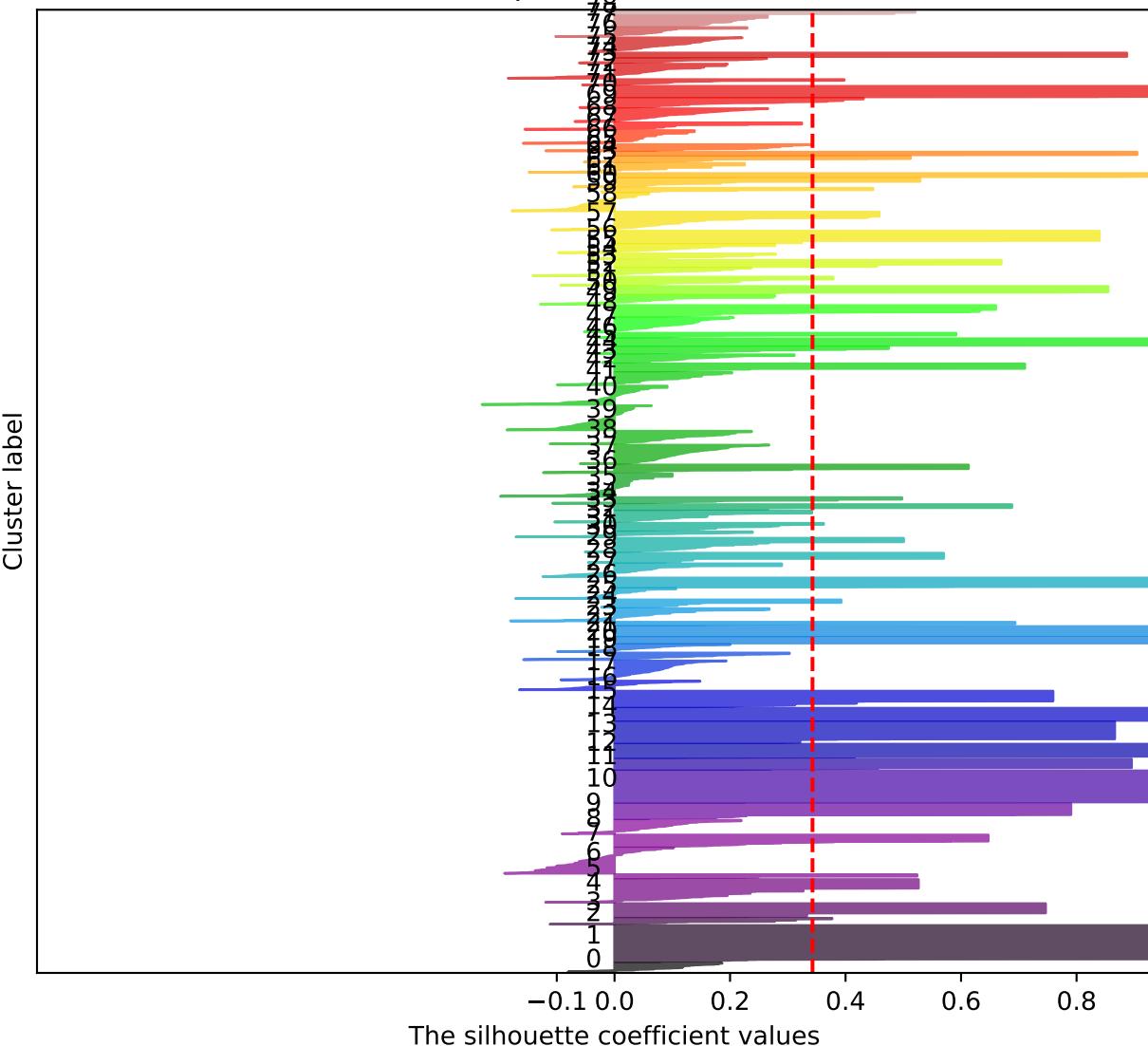


Silhouette analysis for KMeans clustering on sample data with n_clusters = 78 with Average Silhouette of: 0.34814369678497314

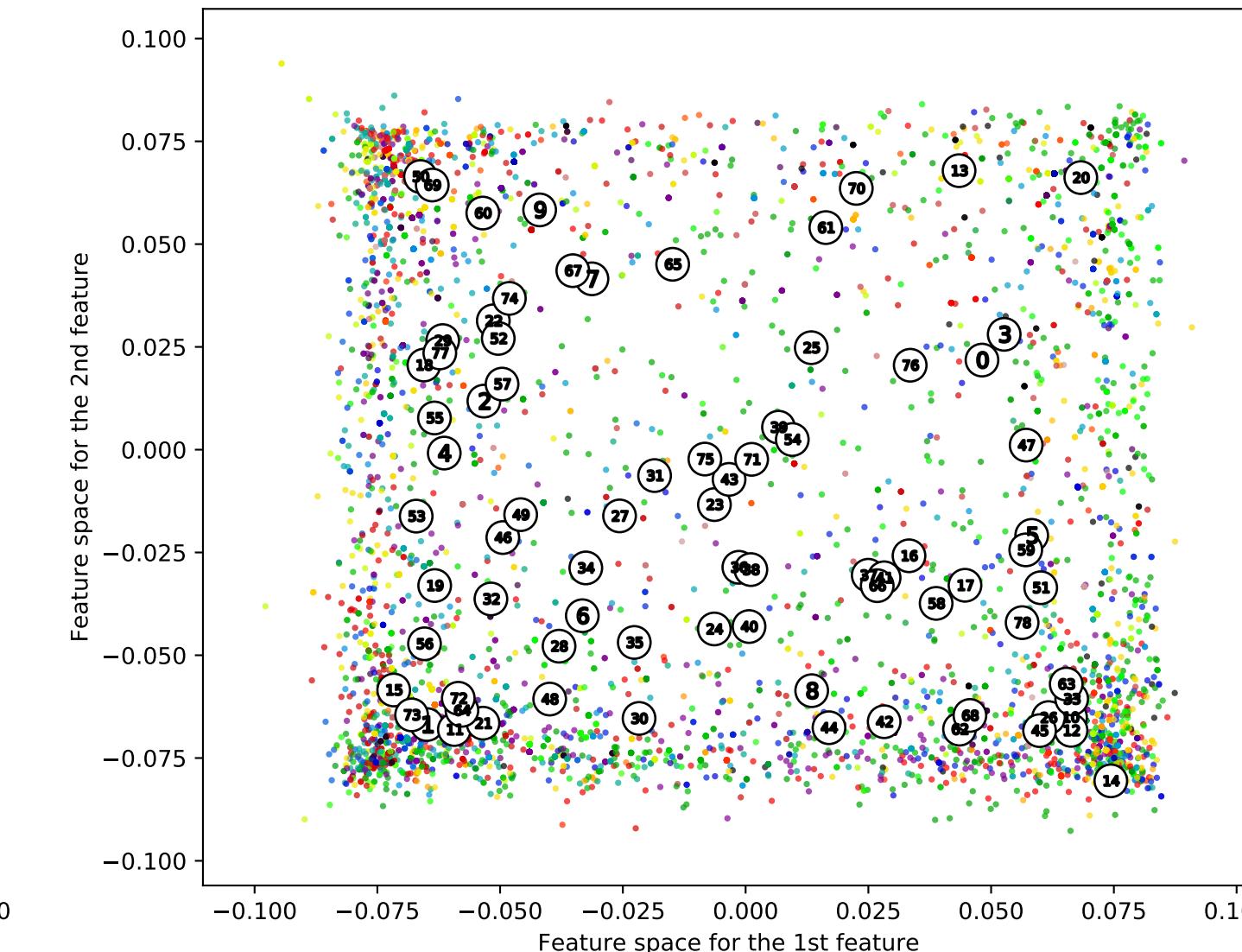


Silhouette analysis for KMeans clustering on sample data with n_clusters = 79 with Average Silhouette of: 0.34279078245162964

The silhouette plot for the various clusters.

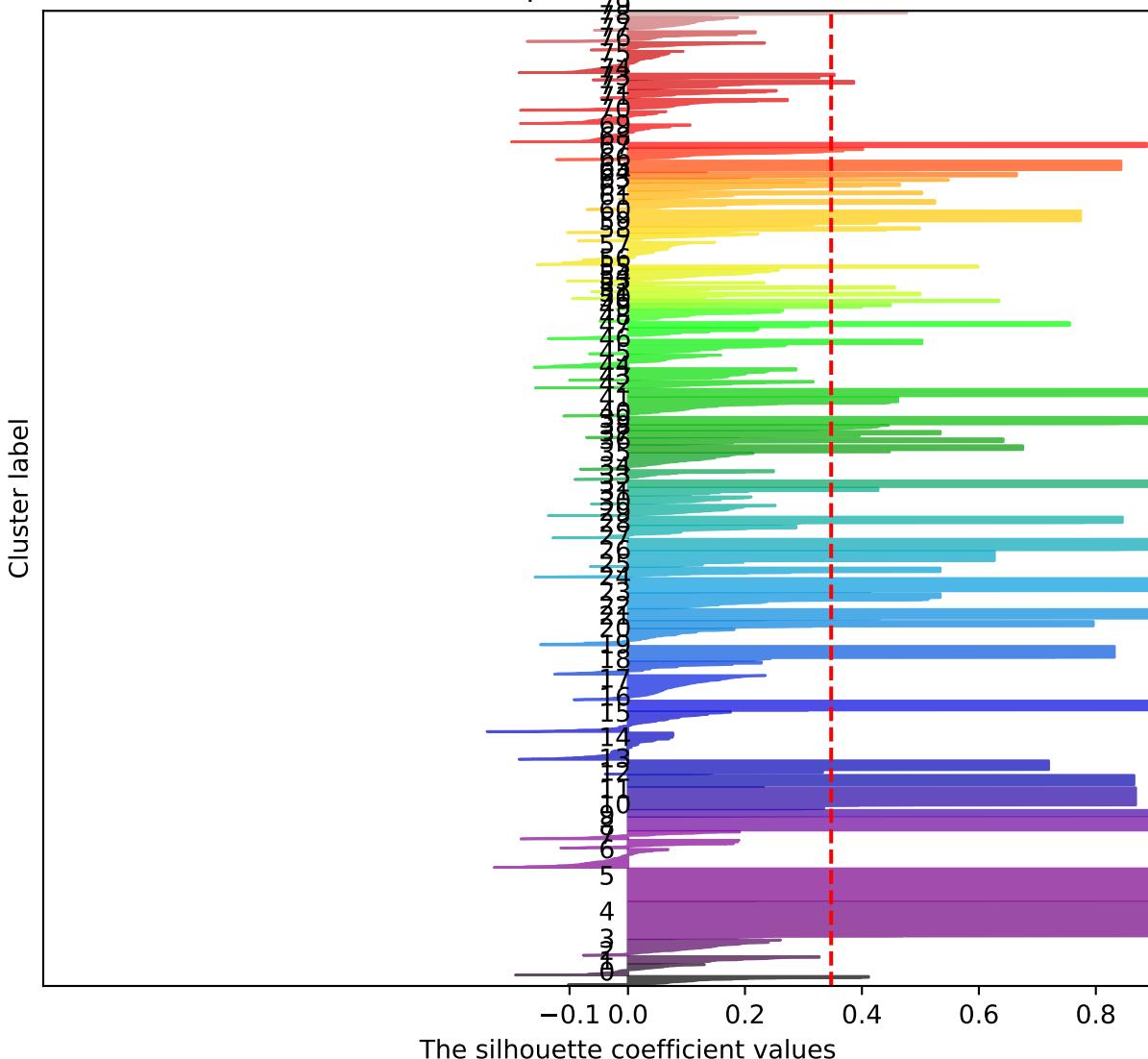


The visualization of the clustered data.

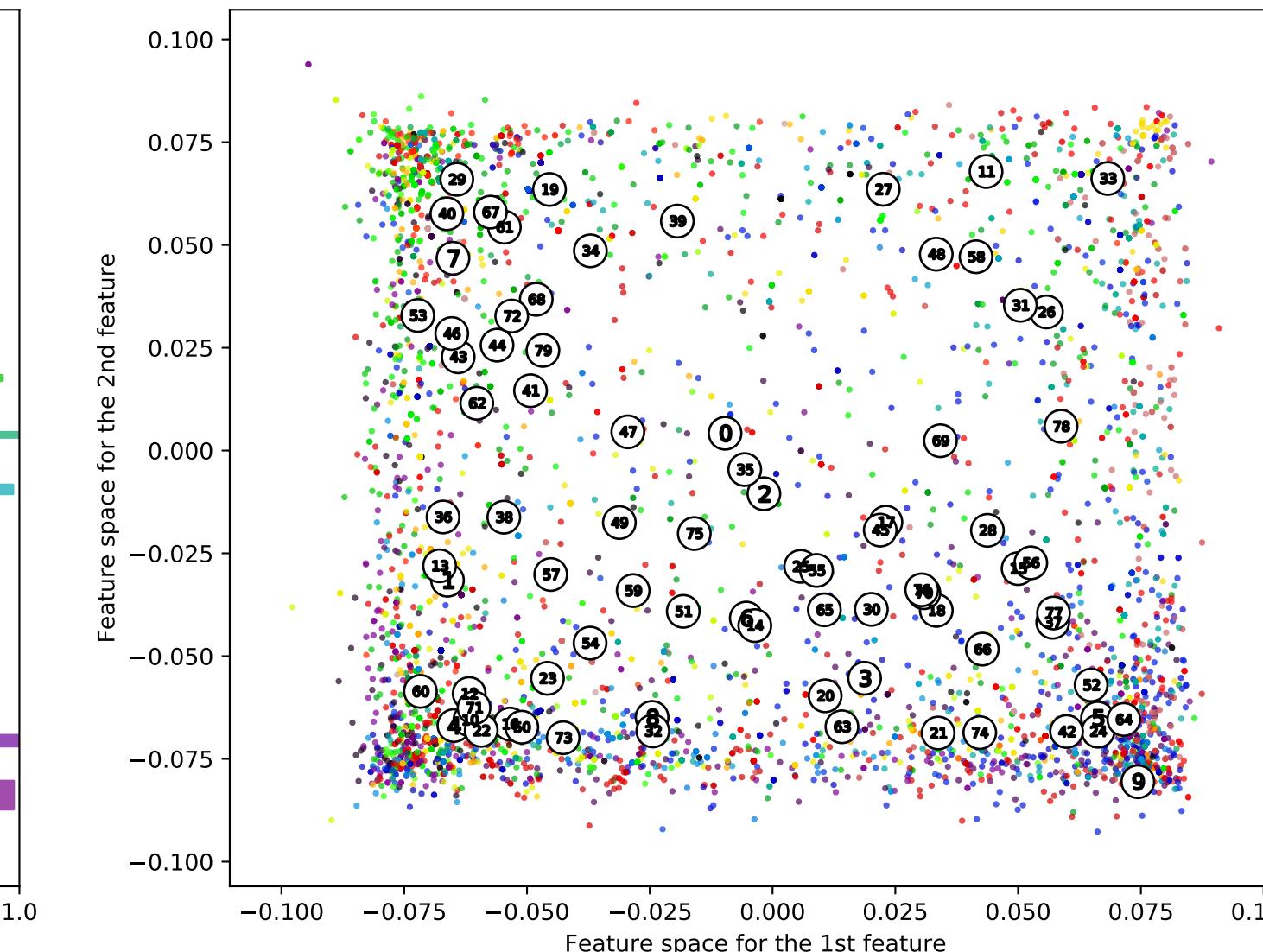


Silhouette analysis for KMeans clustering on sample data with n_clusters = 80 with Average Silhouette of: 0.3474012613296509

The silhouette plot for the various clusters.

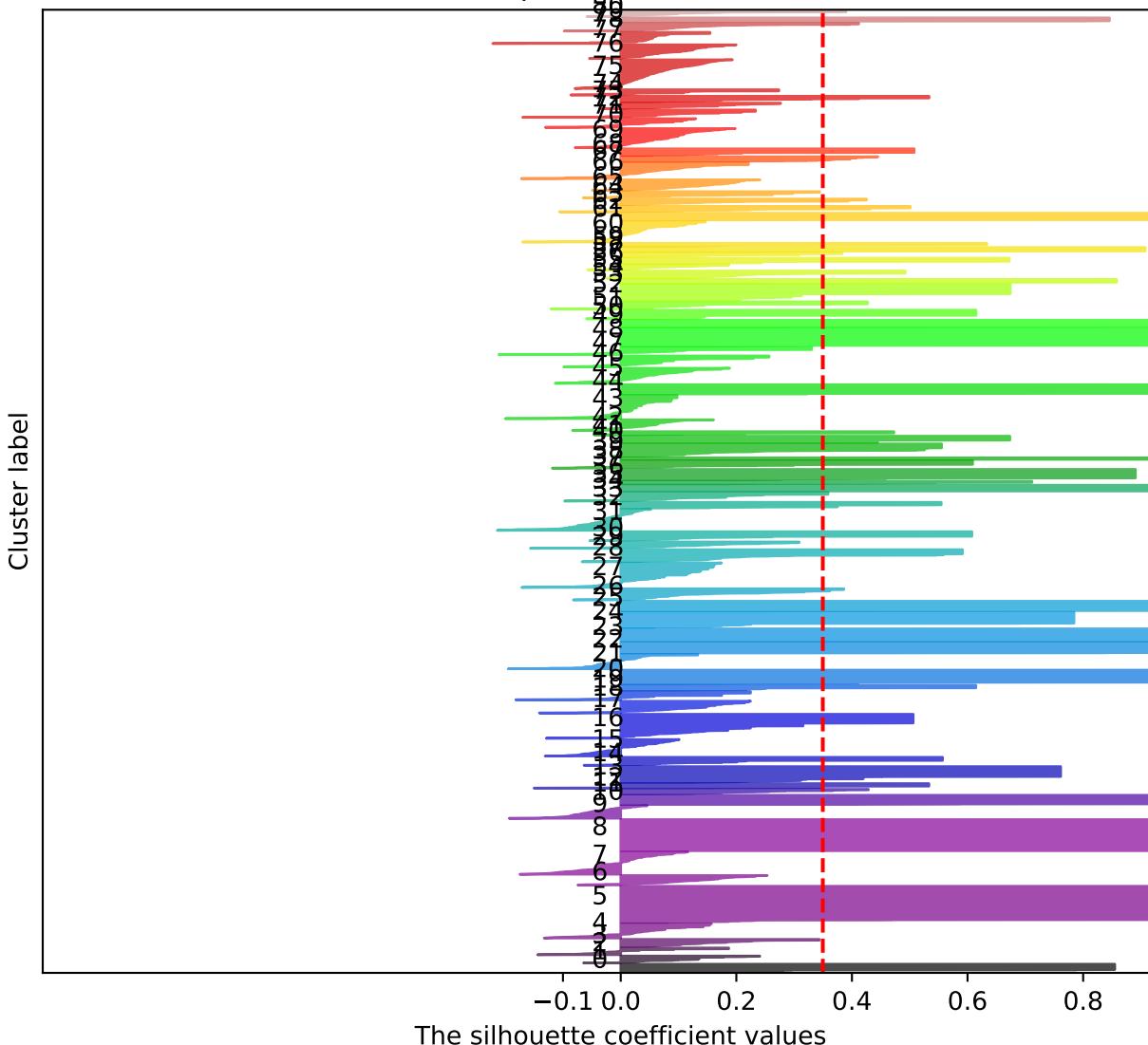


The visualization of the clustered data.

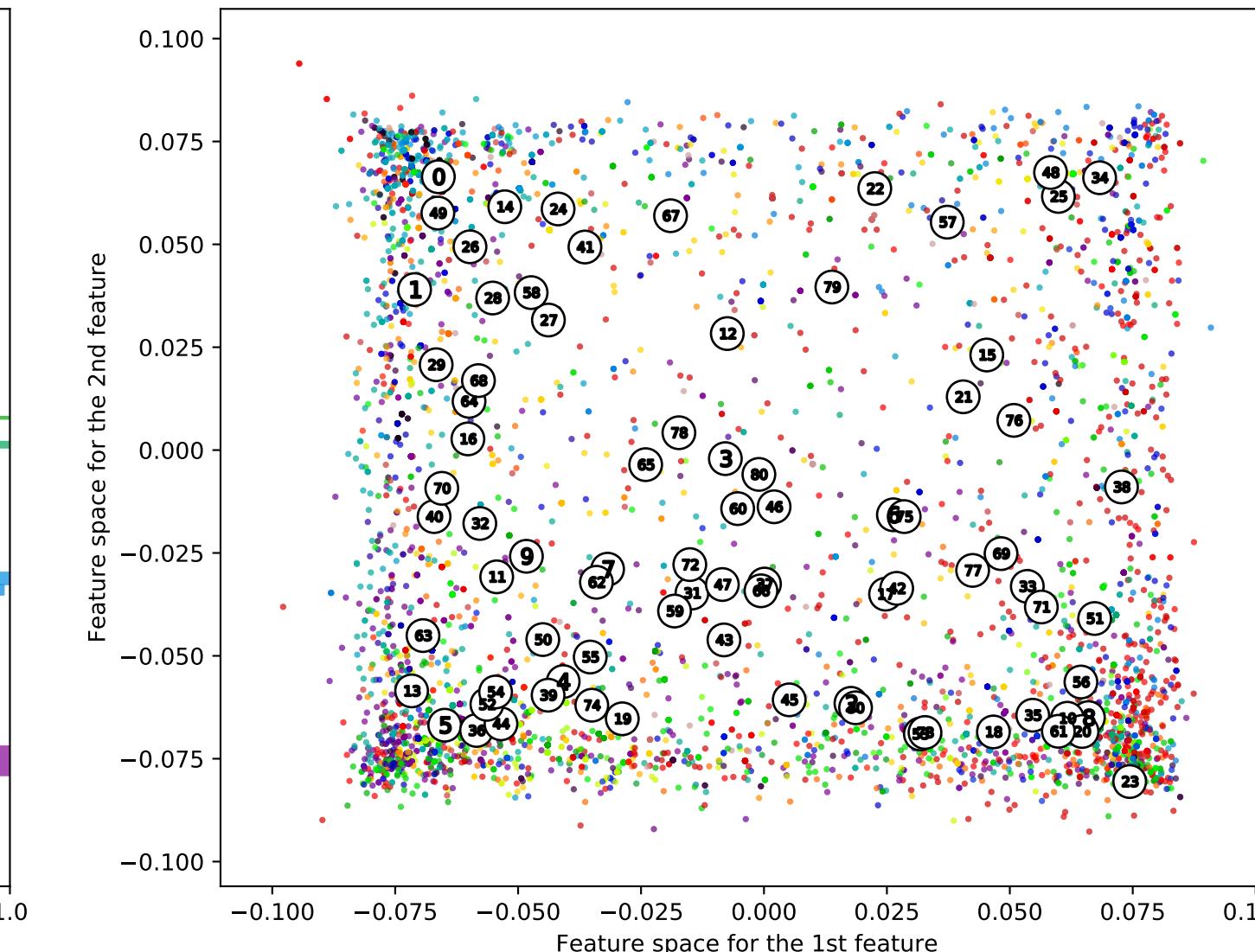


Silhouette analysis for KMeans clustering on sample data with n_clusters = 81 with Average Silhouette of: 0.3496035635471344

The silhouette plot for the various clusters.

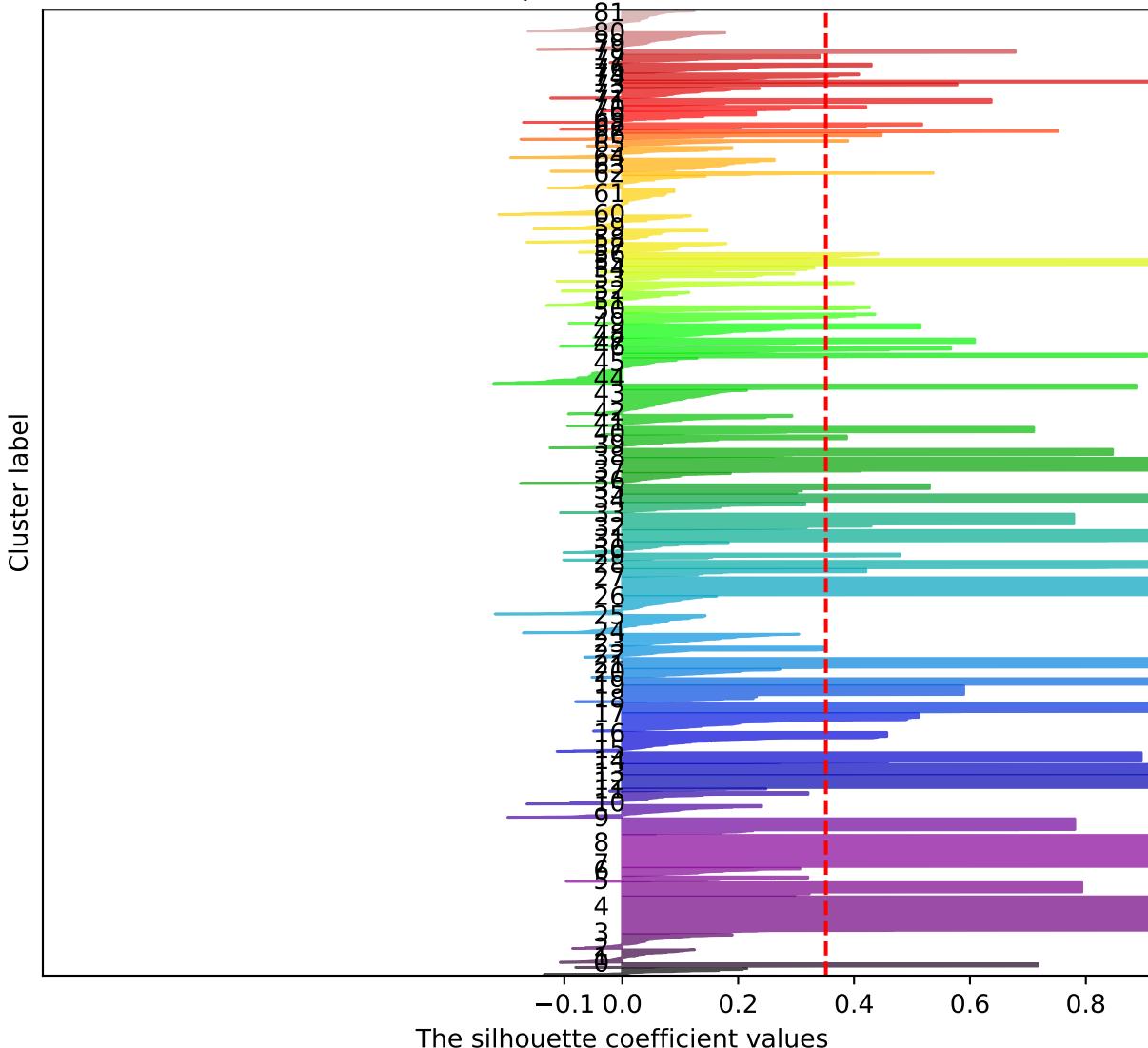


The visualization of the clustered data.

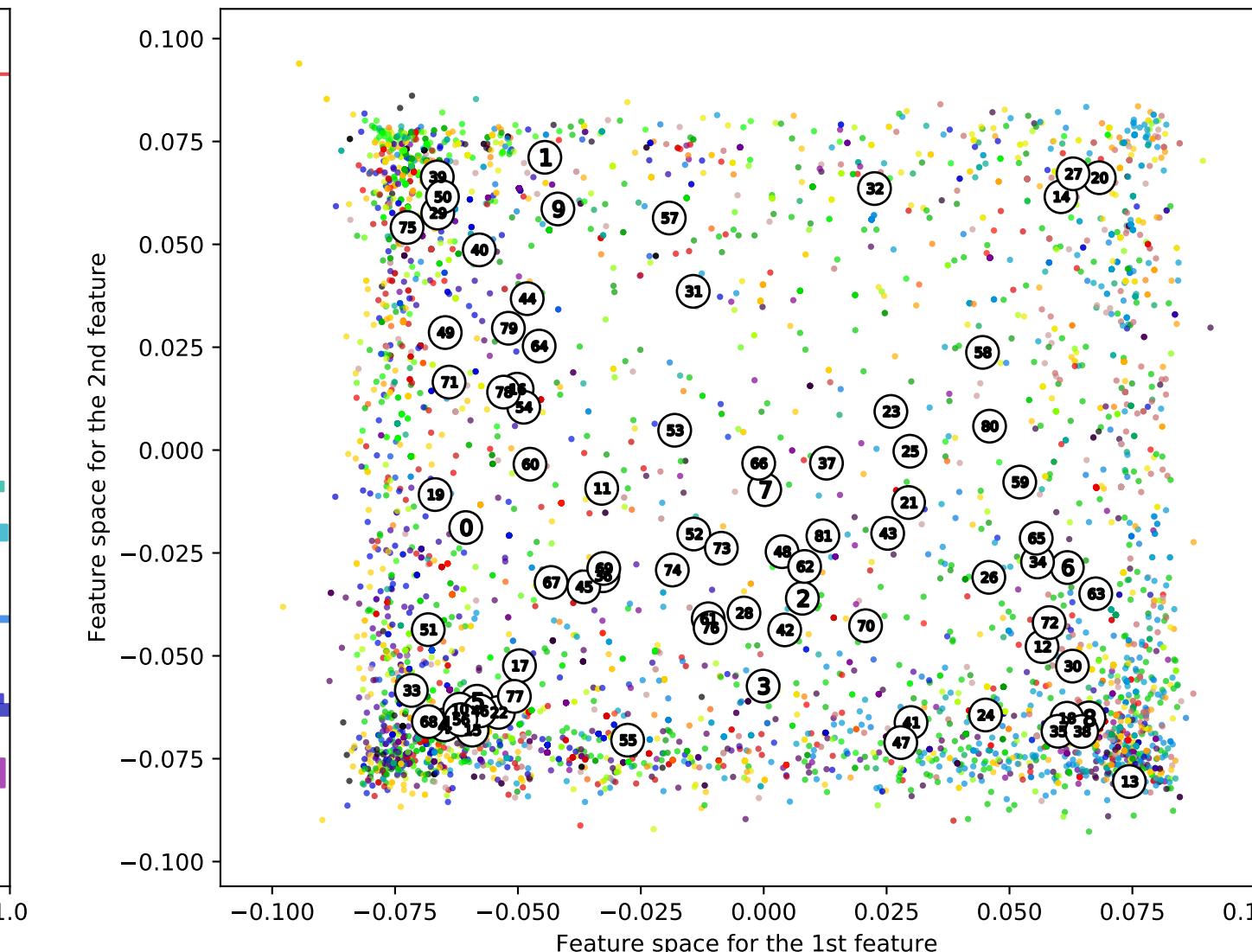


Silhouette analysis for KMeans clustering on sample data with n_clusters = 82 with Average Silhouette of: 0.3513246178627014

The silhouette plot for the various clusters.

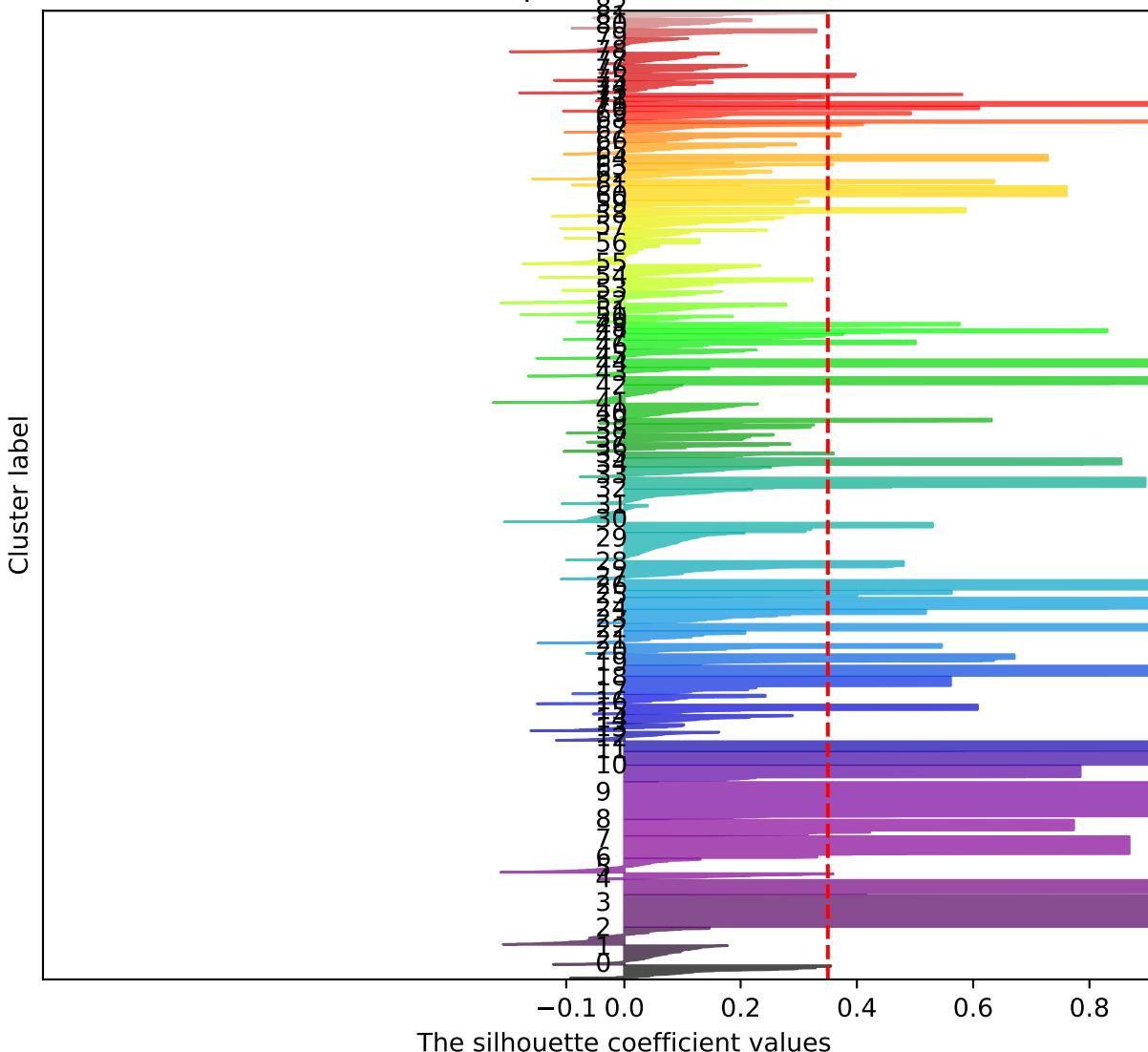


The visualization of the clustered data.

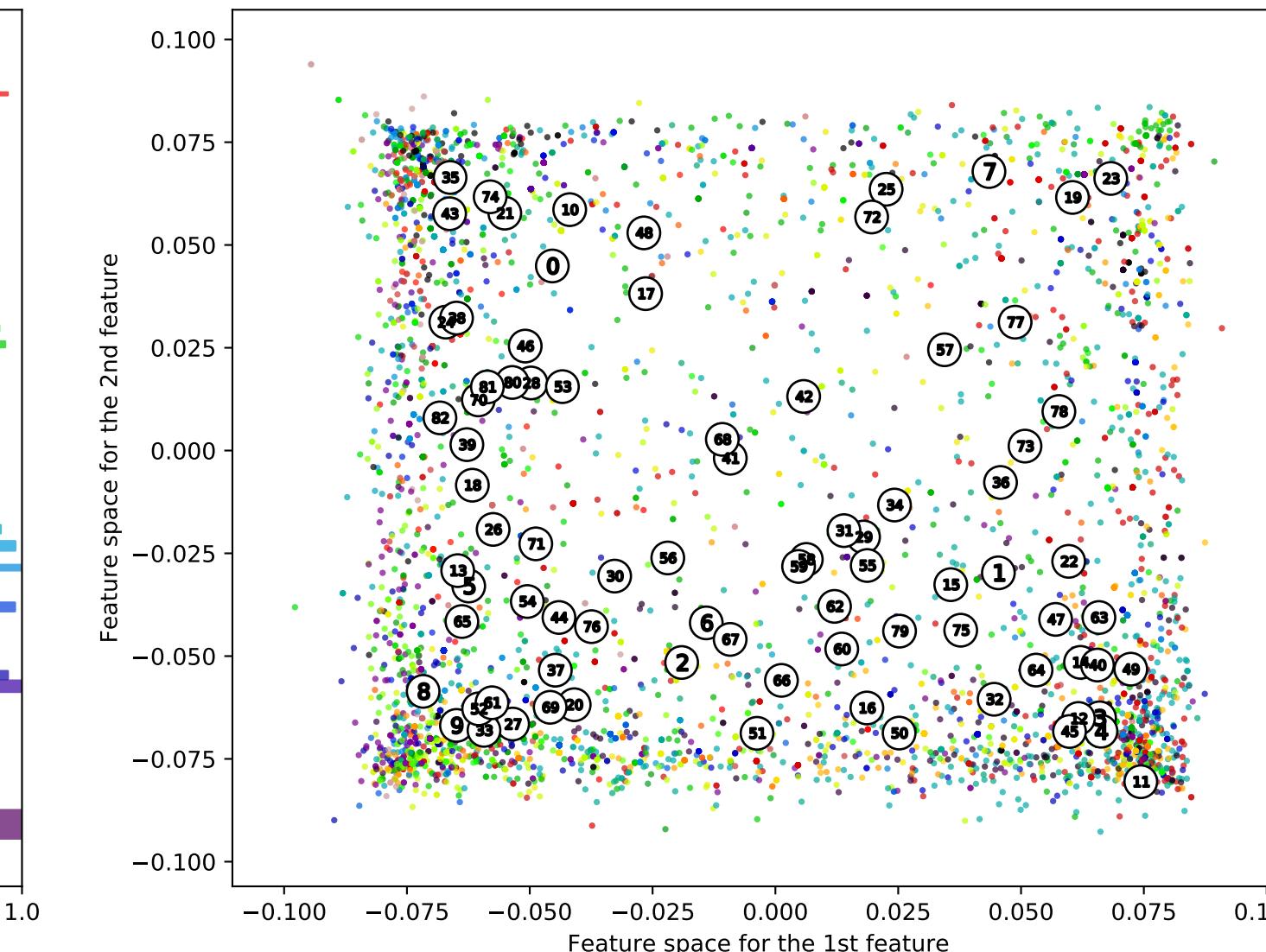


Silhouette analysis for KMeans clustering on sample data with n_clusters = 83 with Average Silhouette of: 0.350045621395111

The silhouette plot for the various clusters.

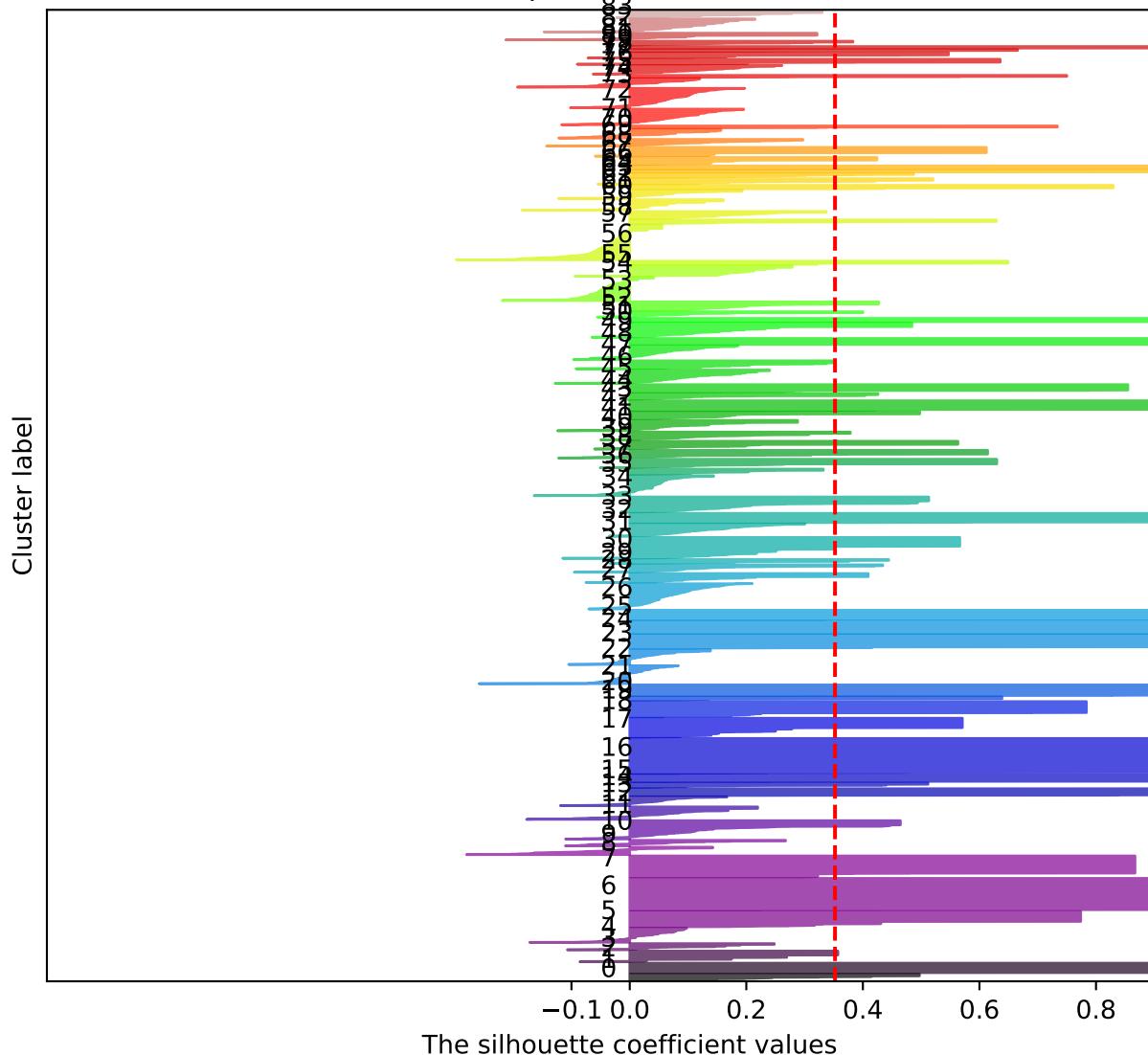


The visualization of the clustered data.

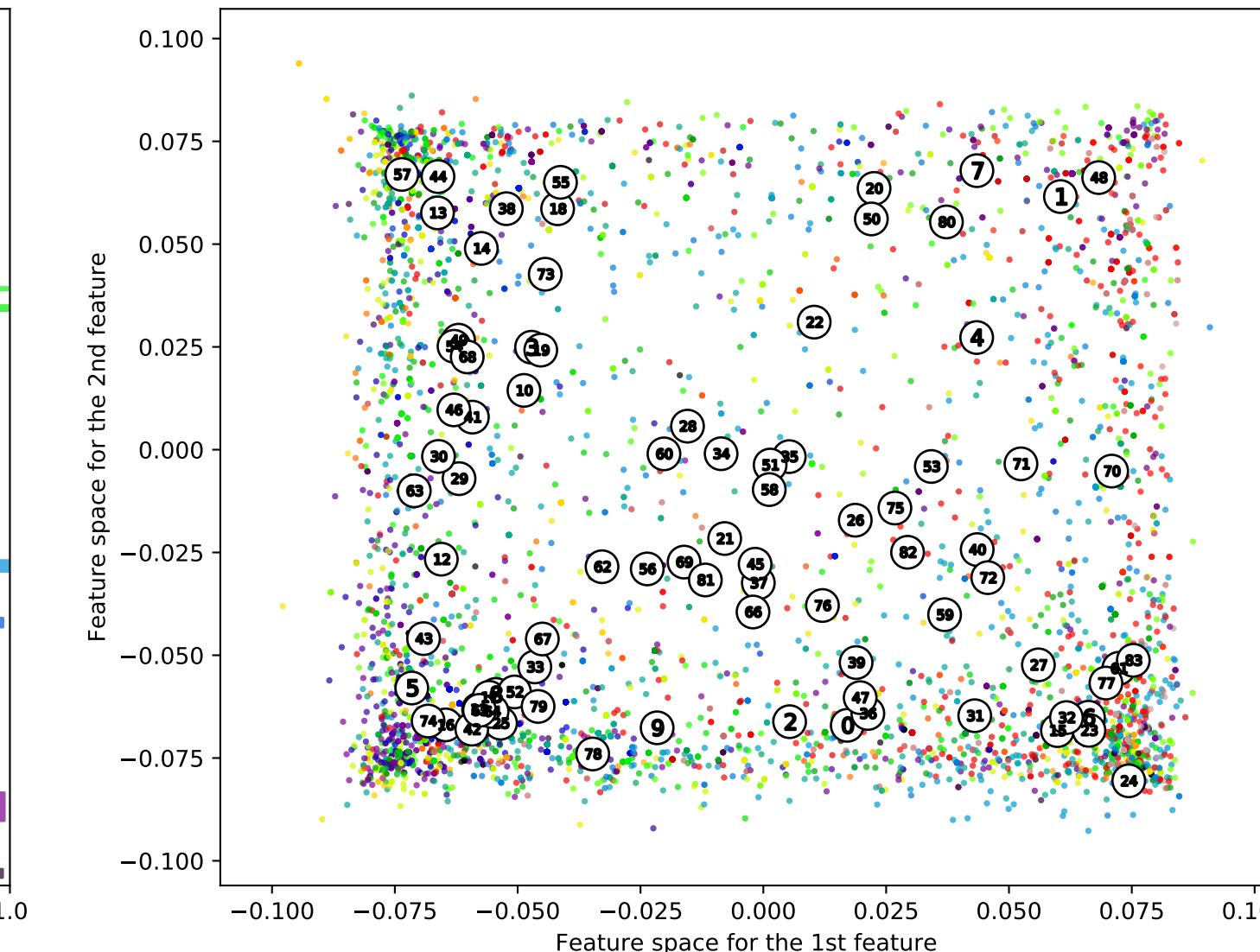


Silhouette analysis for KMeans clustering on sample data with n_clusters = 84 with Average Silhouette of: 0.35219162702560425

The silhouette plot for the various clusters.

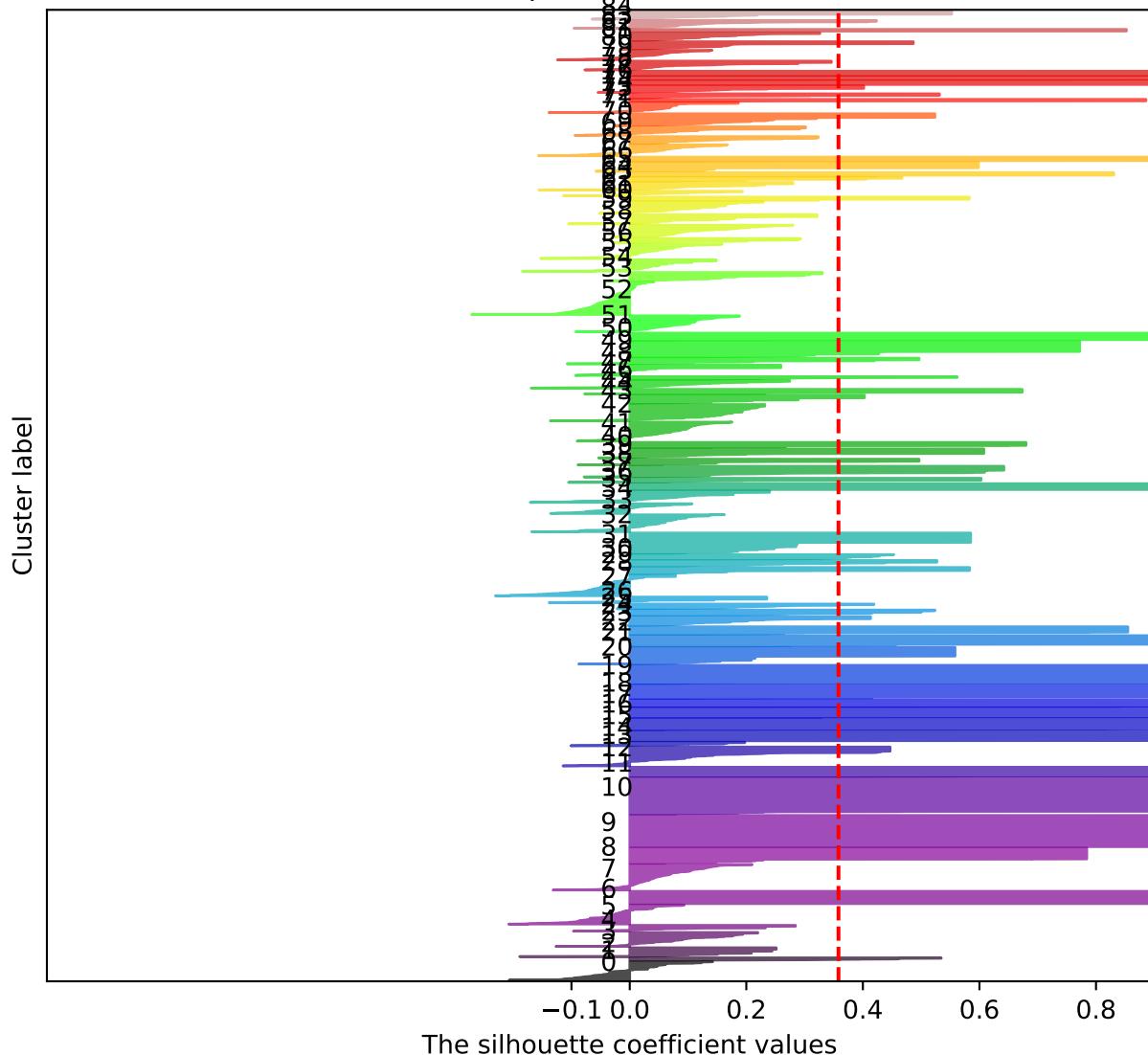


The visualization of the clustered data.

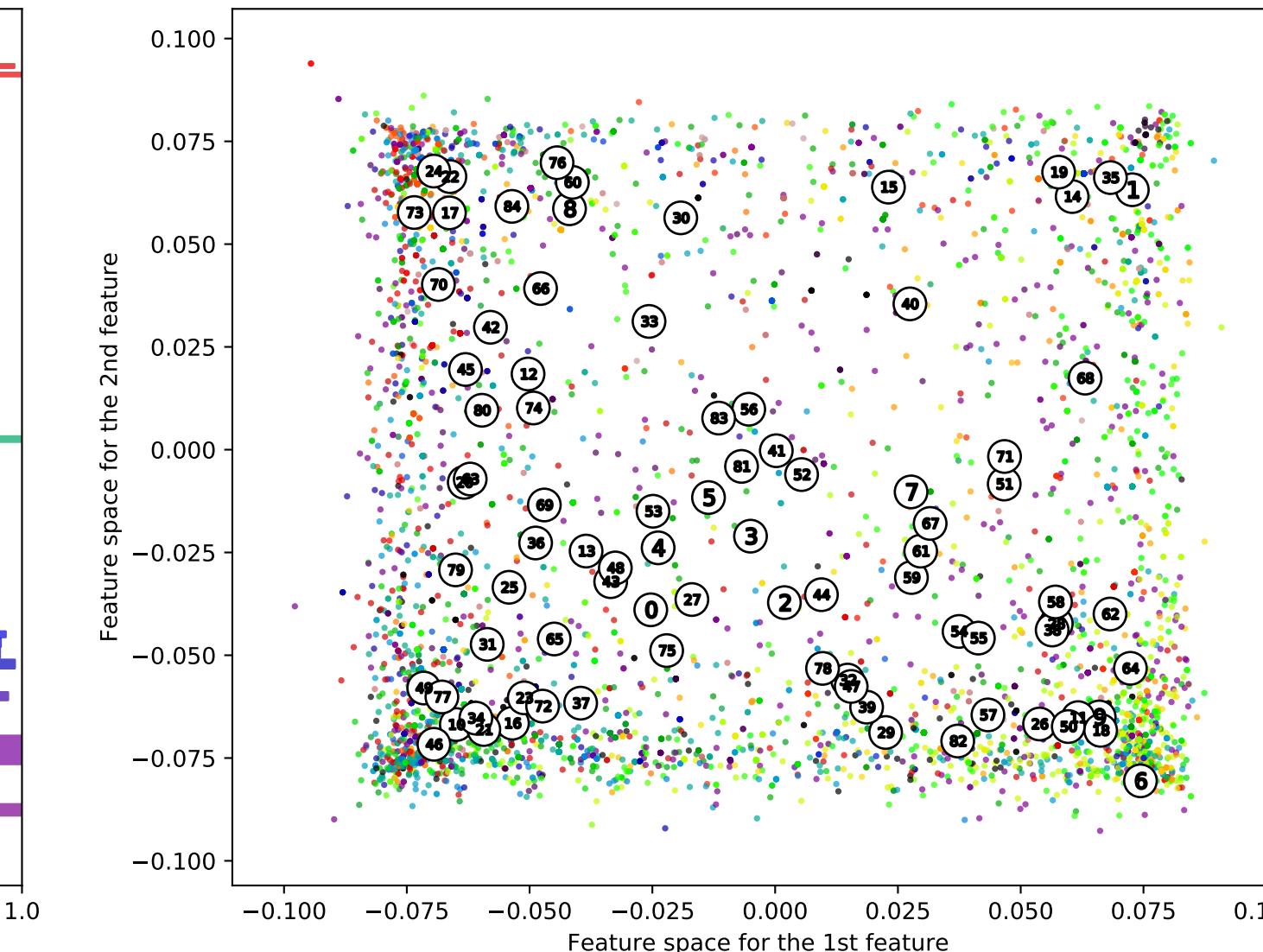


Silhouette analysis for KMeans clustering on sample data with n_clusters = 85 with Average Silhouette of: 0.358134001493454

The silhouette plot for the various clusters.

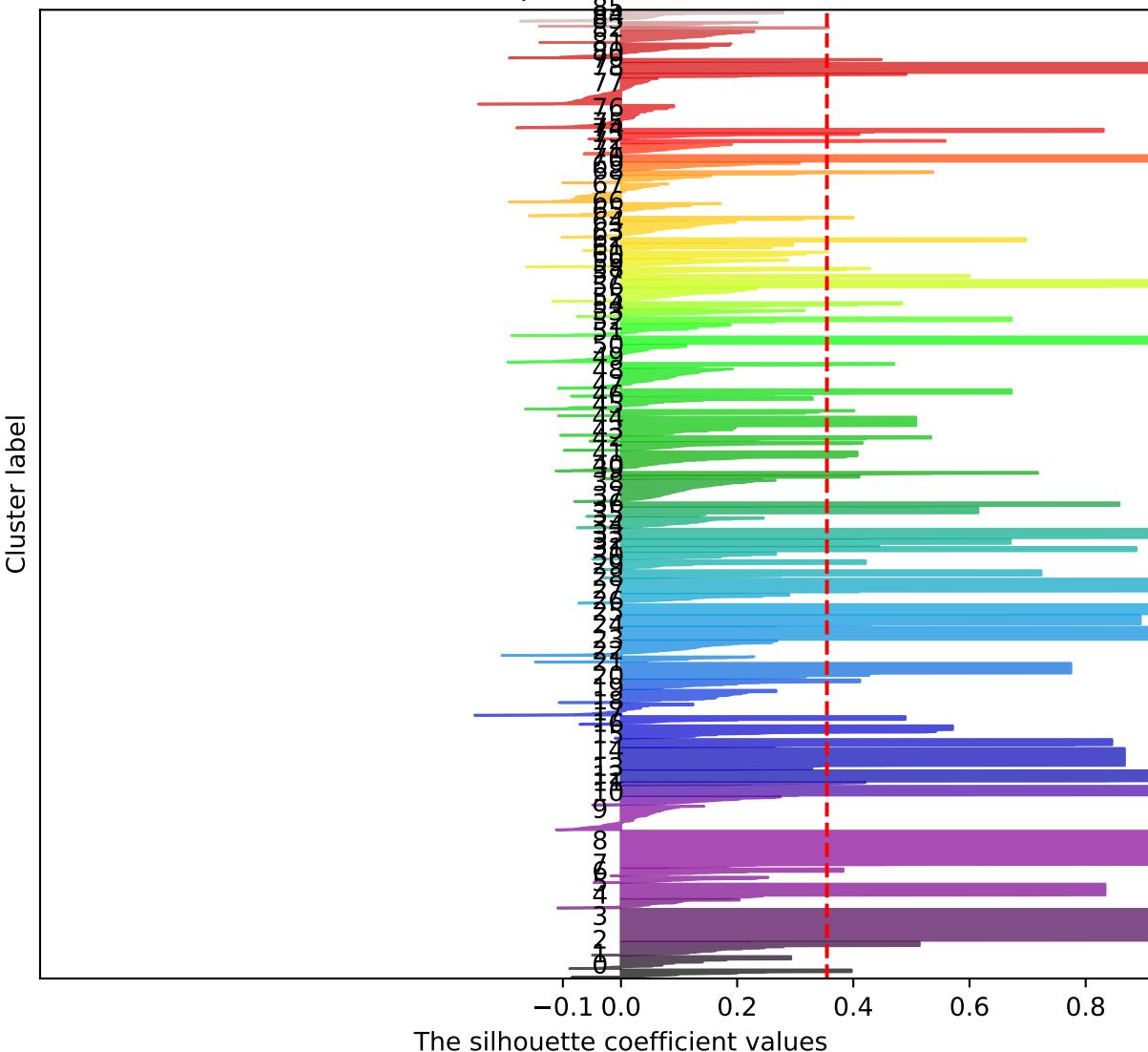


The visualization of the clustered data.

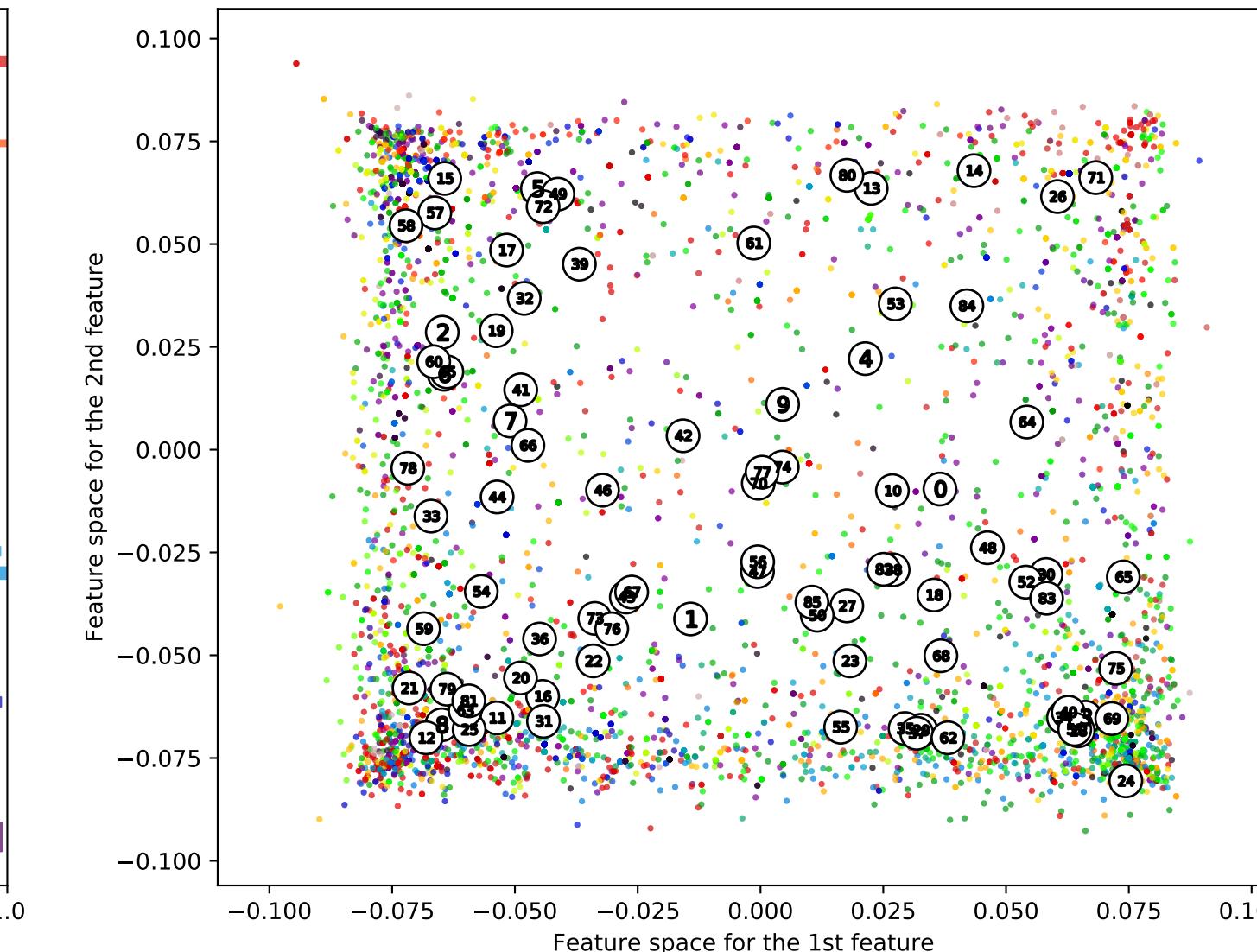


Silhouette analysis for KMeans clustering on sample data with n_clusters = 86 with Average Silhouette of: 0.35456499457359314

The silhouette plot for the various clusters.

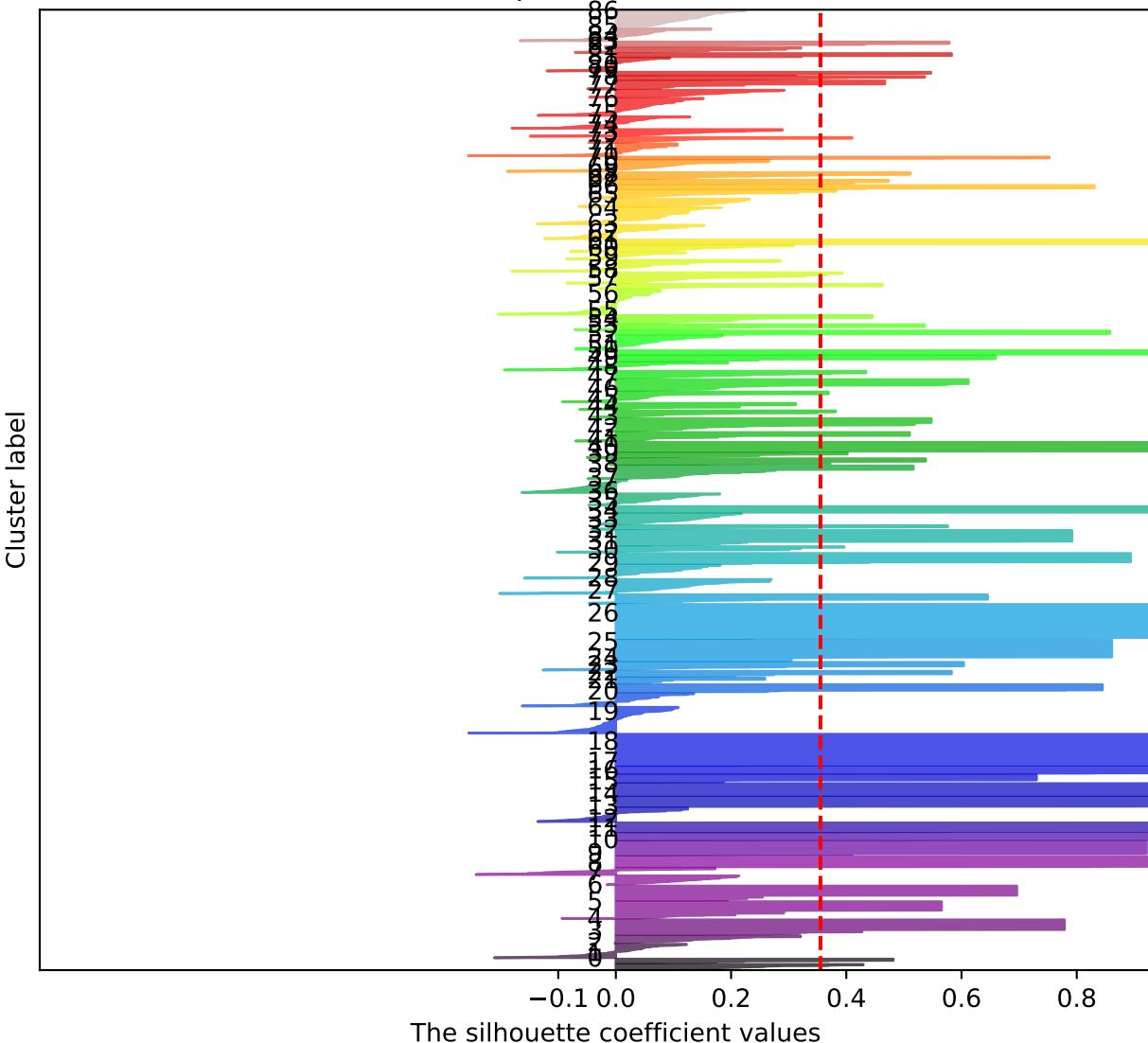


The visualization of the clustered data.

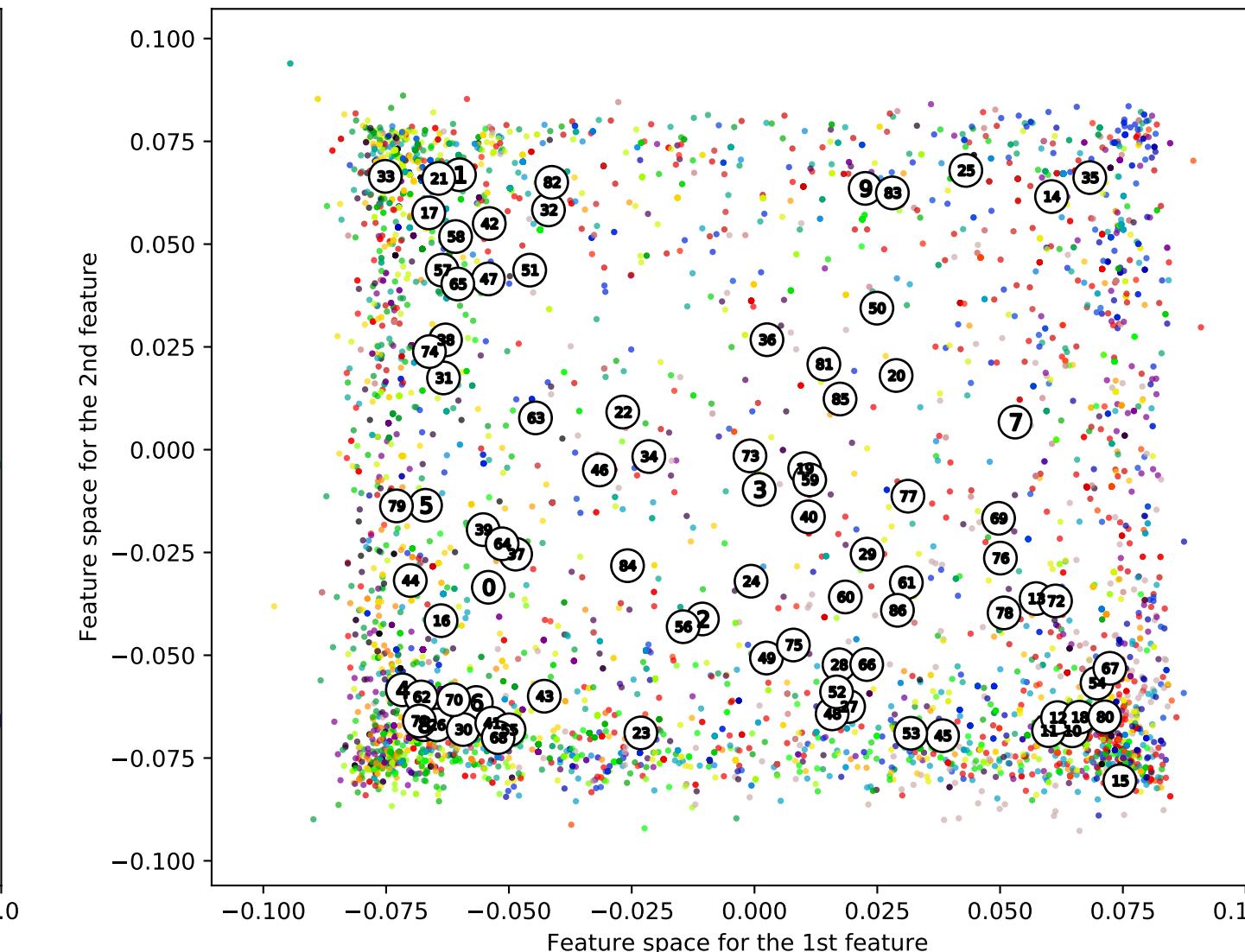


Silhouette analysis for KMeans clustering on sample data with n_clusters = 87 with Average Silhouette of: 0.35517099499702454

The silhouette plot for the various clusters.

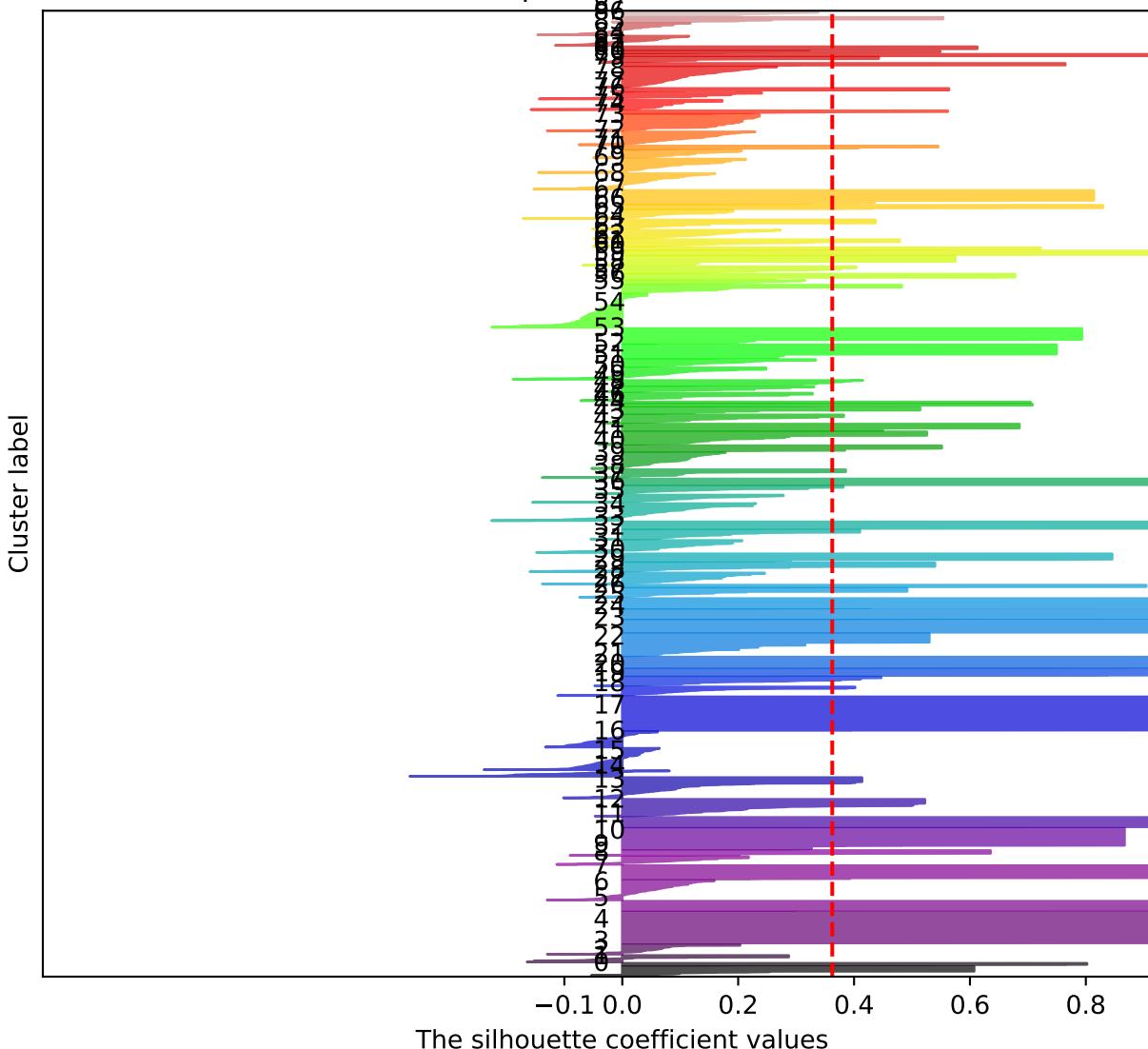


The visualization of the clustered data.

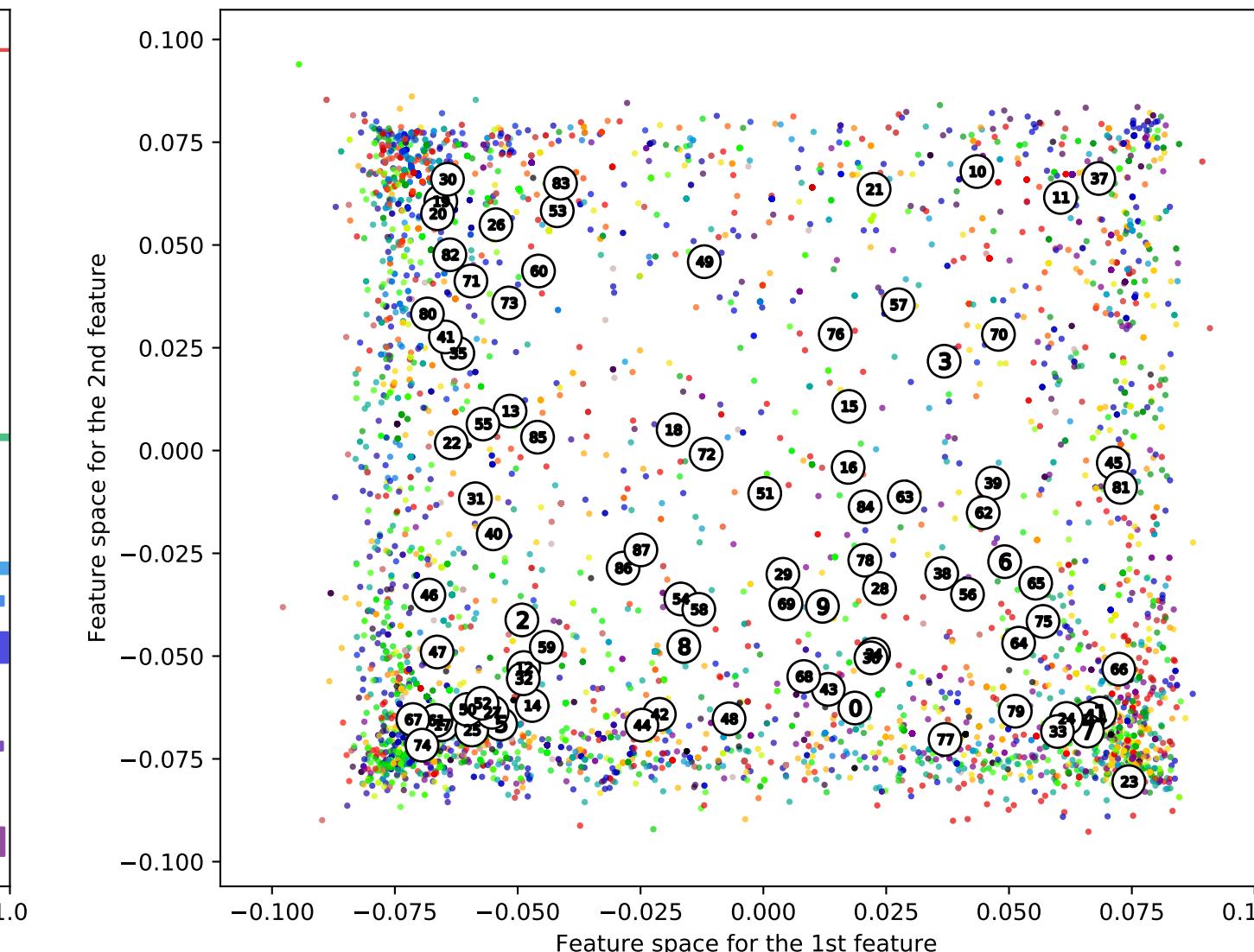


Silhouette analysis for KMeans clustering on sample data with n_clusters = 88 with Average Silhouette of: 0.3623688817024231

The silhouette plot for the various clusters.

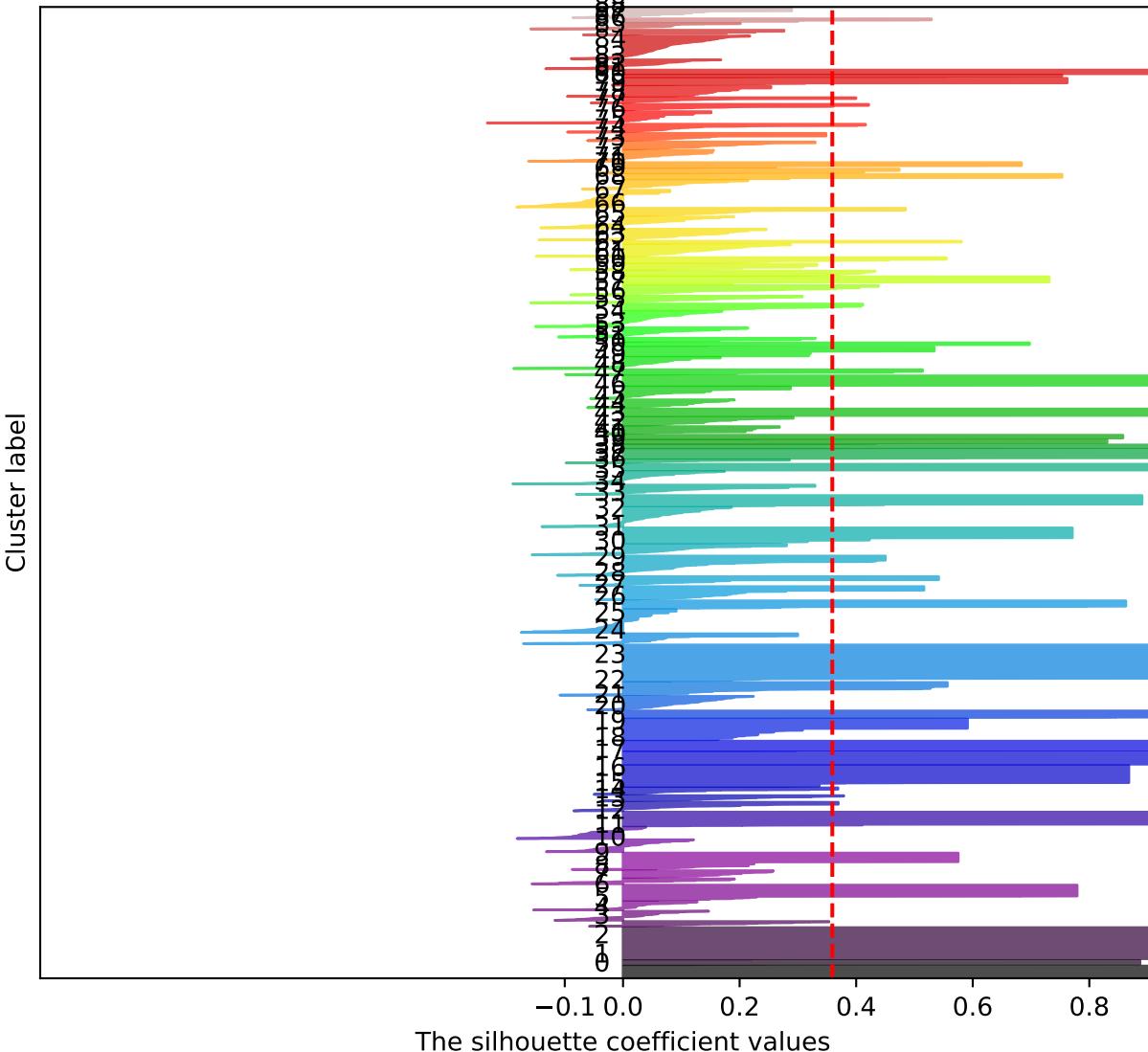


The visualization of the clustered data.

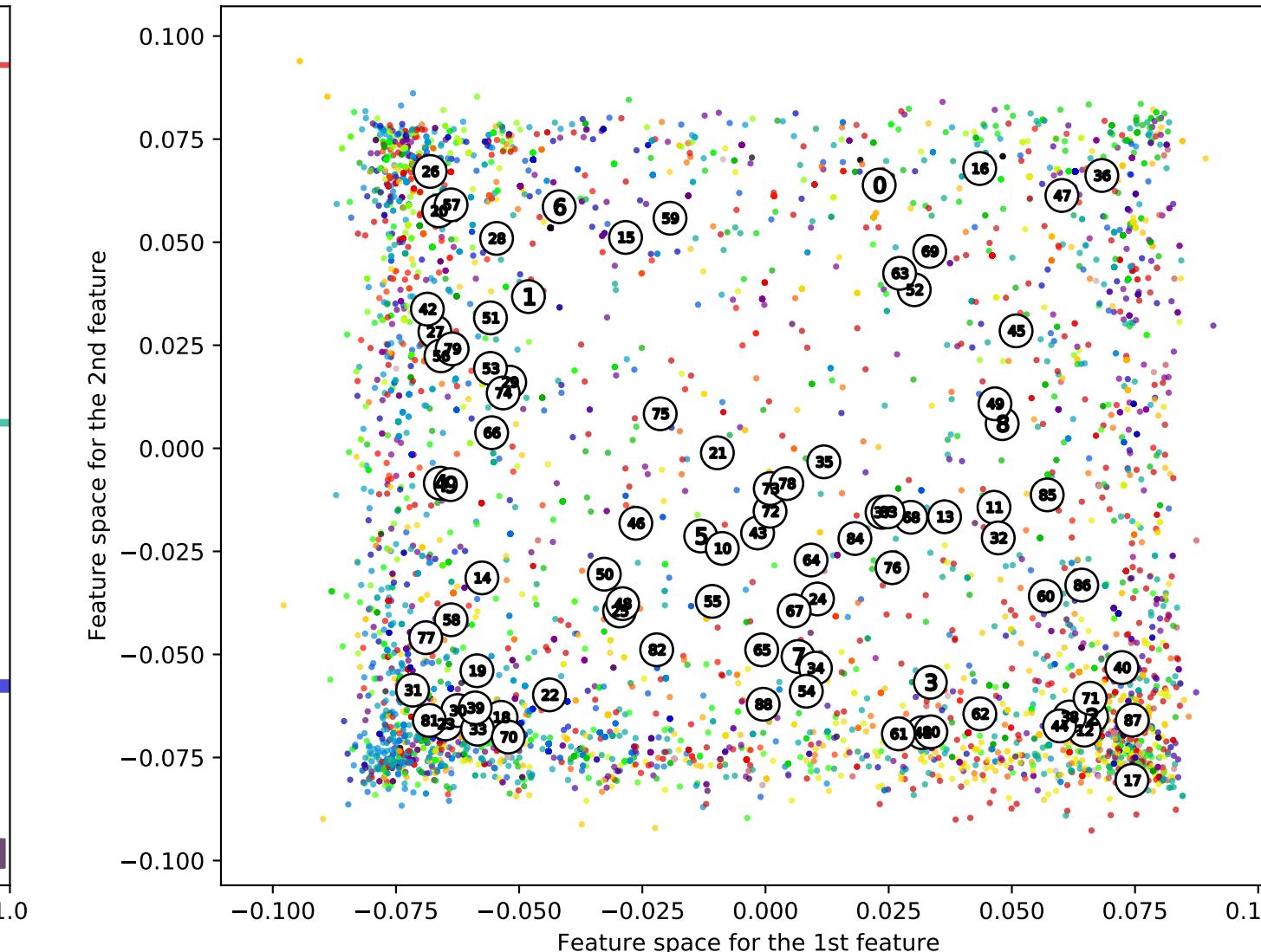


Silhouette analysis for KMeans clustering on sample data with n_clusters = 89 with Average Silhouette of: 0.35901808738708496

The silhouette plot for the various clusters

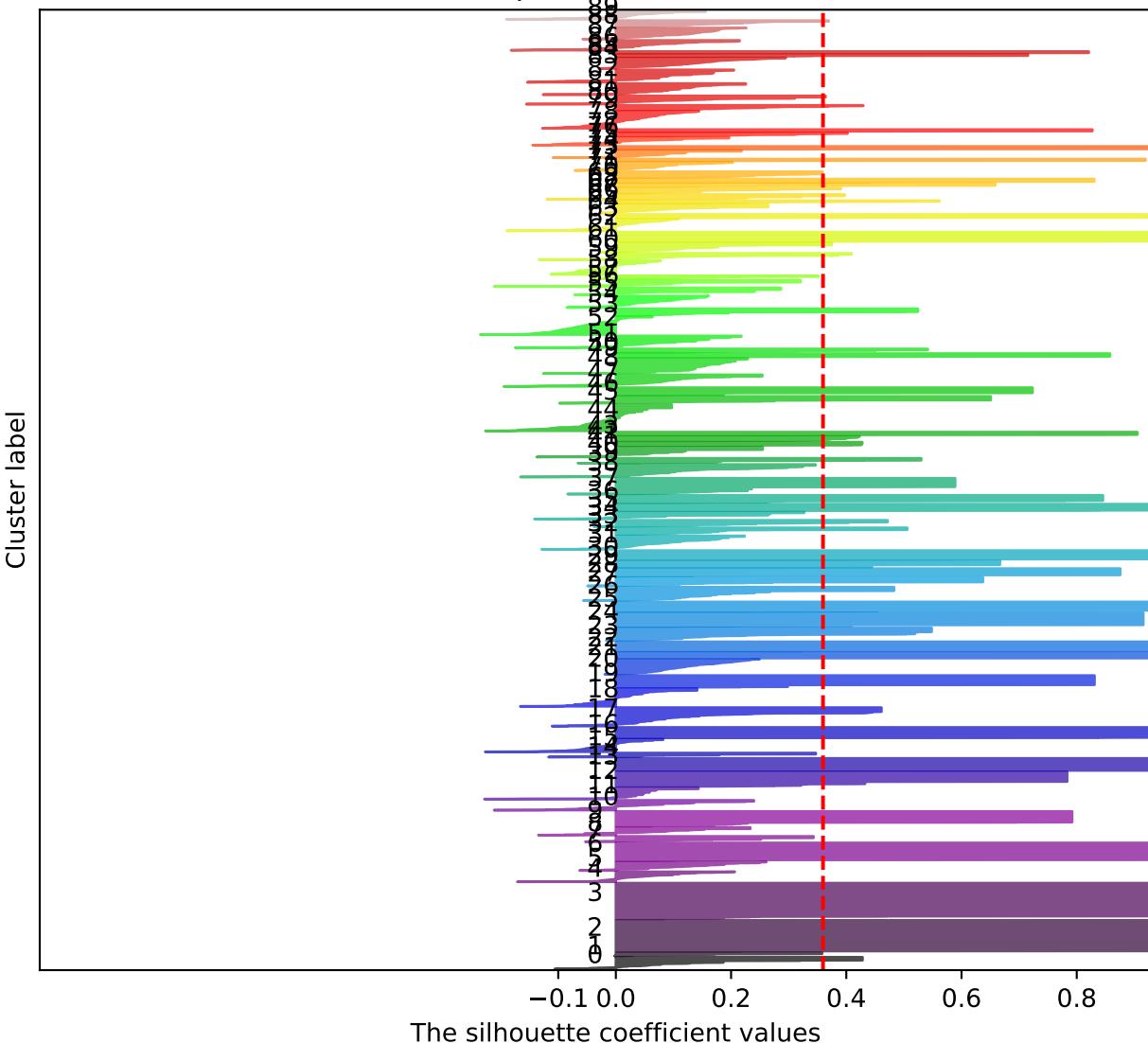


The visualization of the clustered data

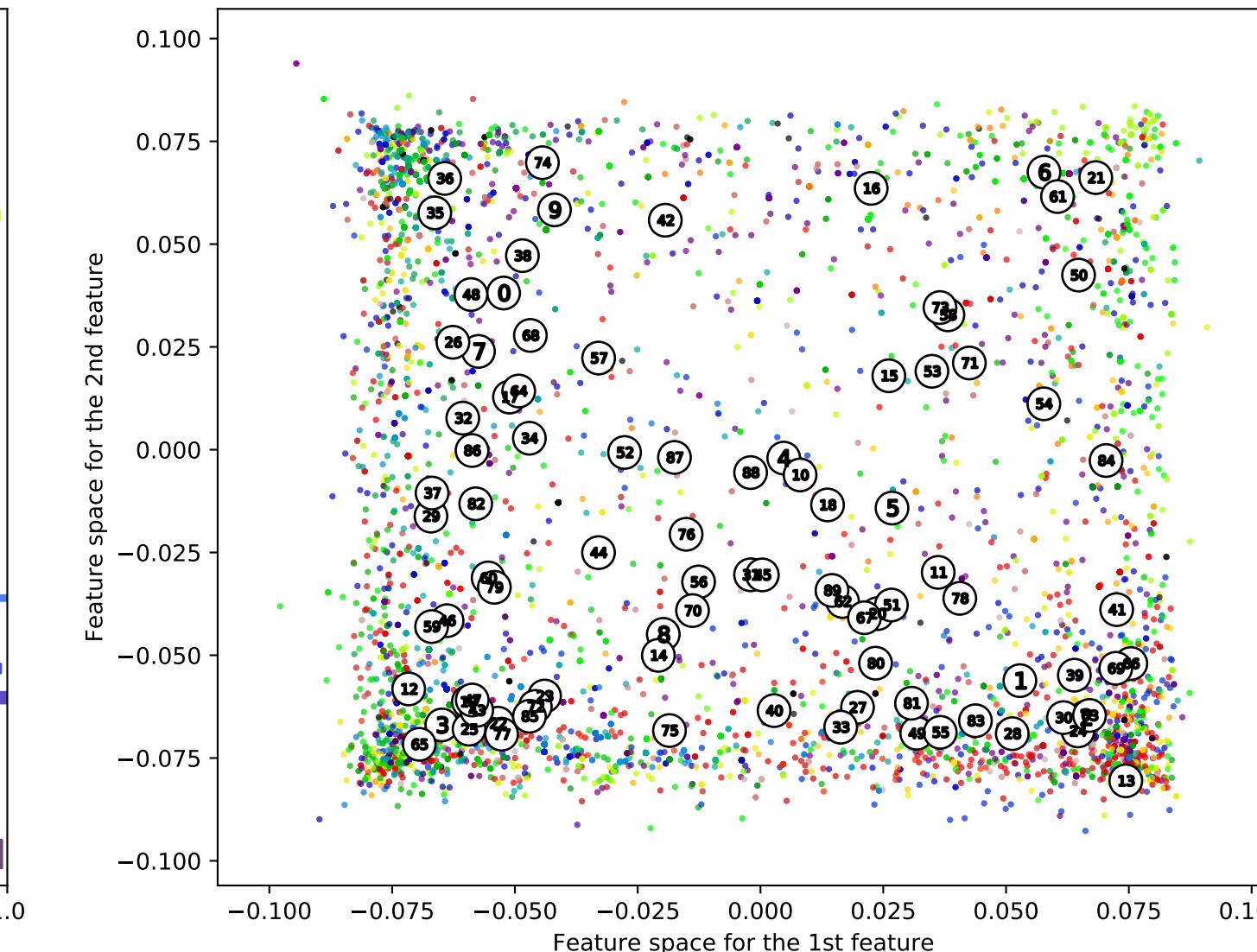


Silhouette analysis for KMeans clustering on sample data with n_clusters = 90 with Average Silhouette of: 0.35954707860946655

The silhouette plot for the various clusters.

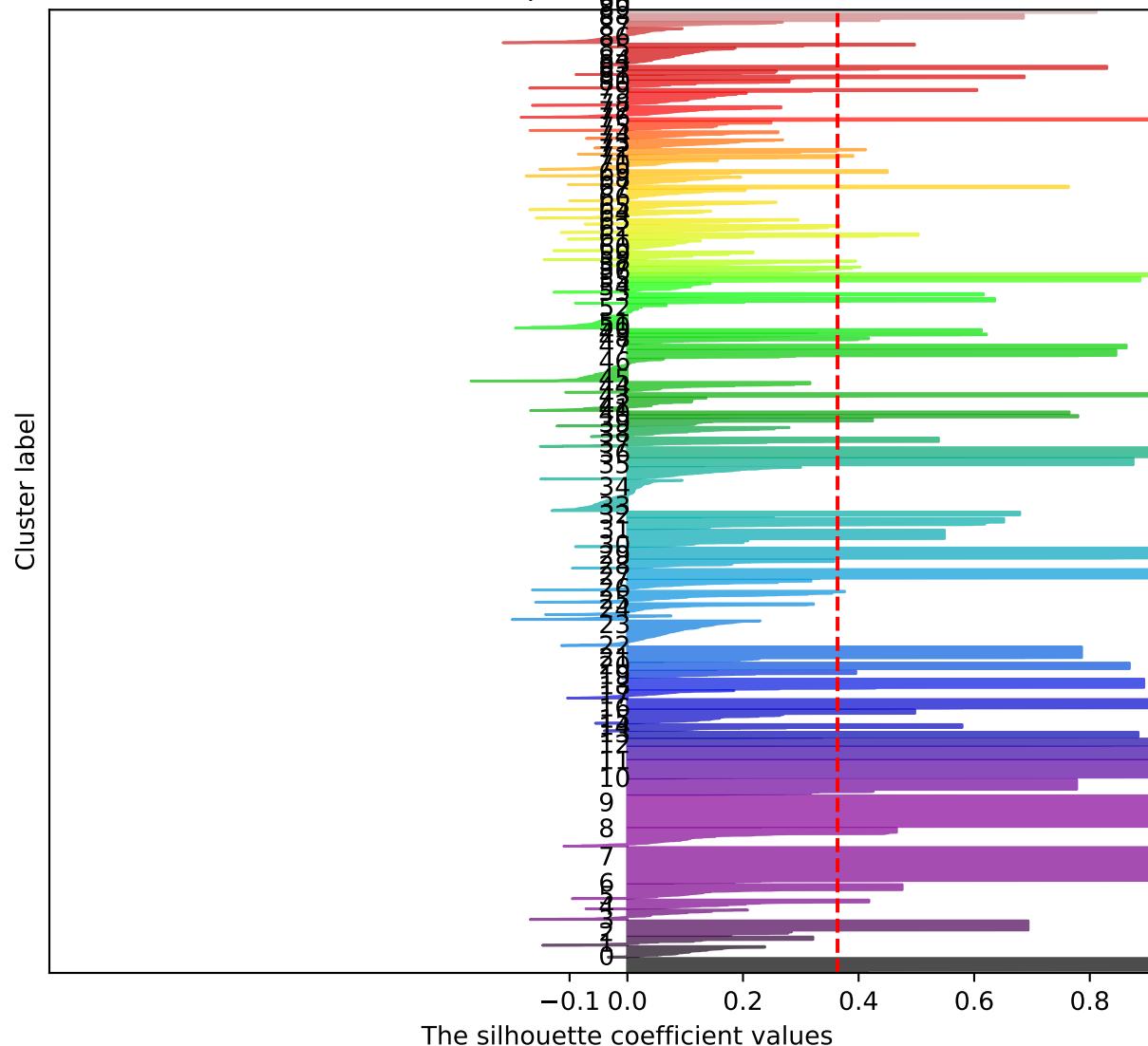


The visualization of the clustered data.

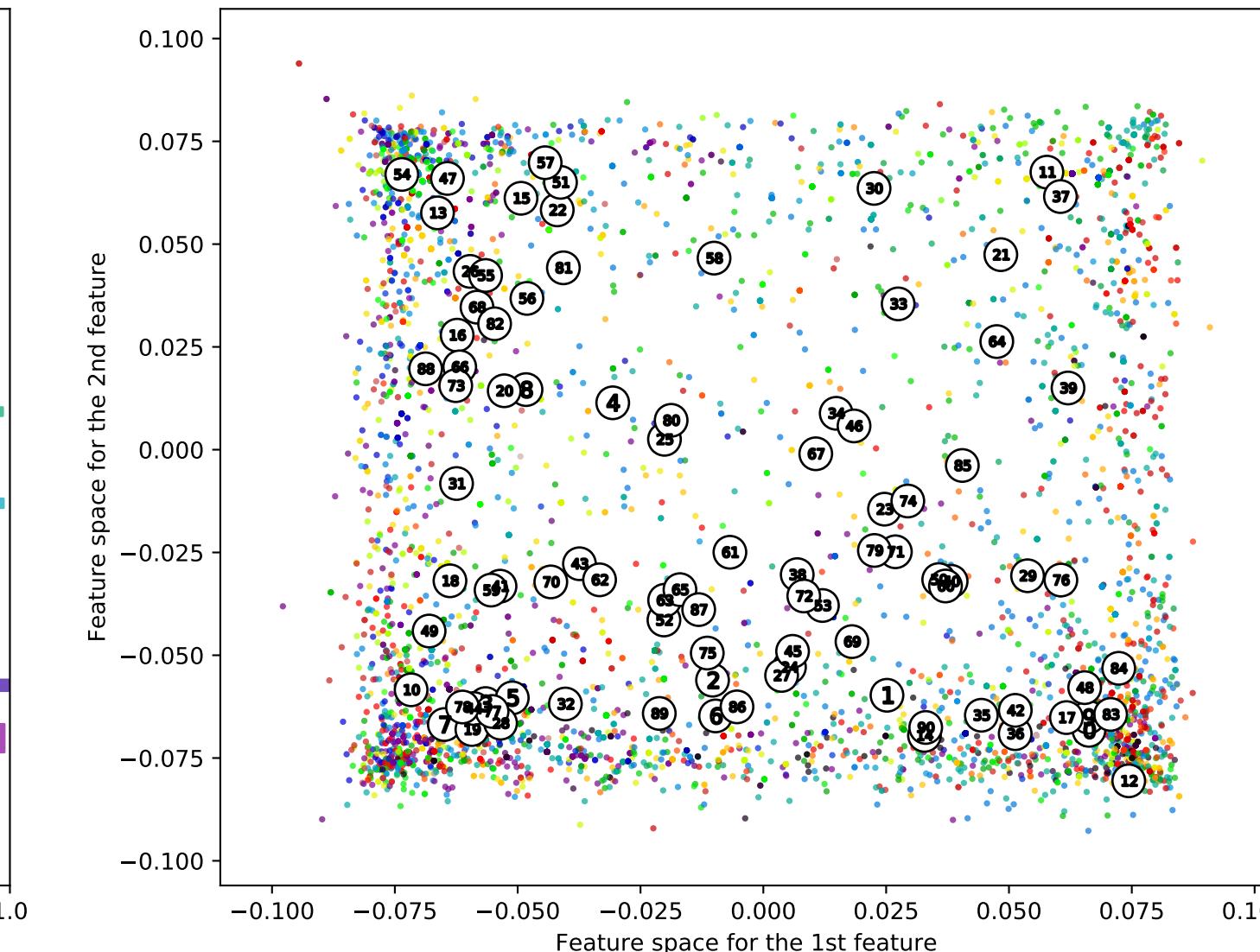


Silhouette analysis for KMeans clustering on sample data with n_clusters = 91 with Average Silhouette of: 0.36361780762672424

The silhouette plot for the various clusters.

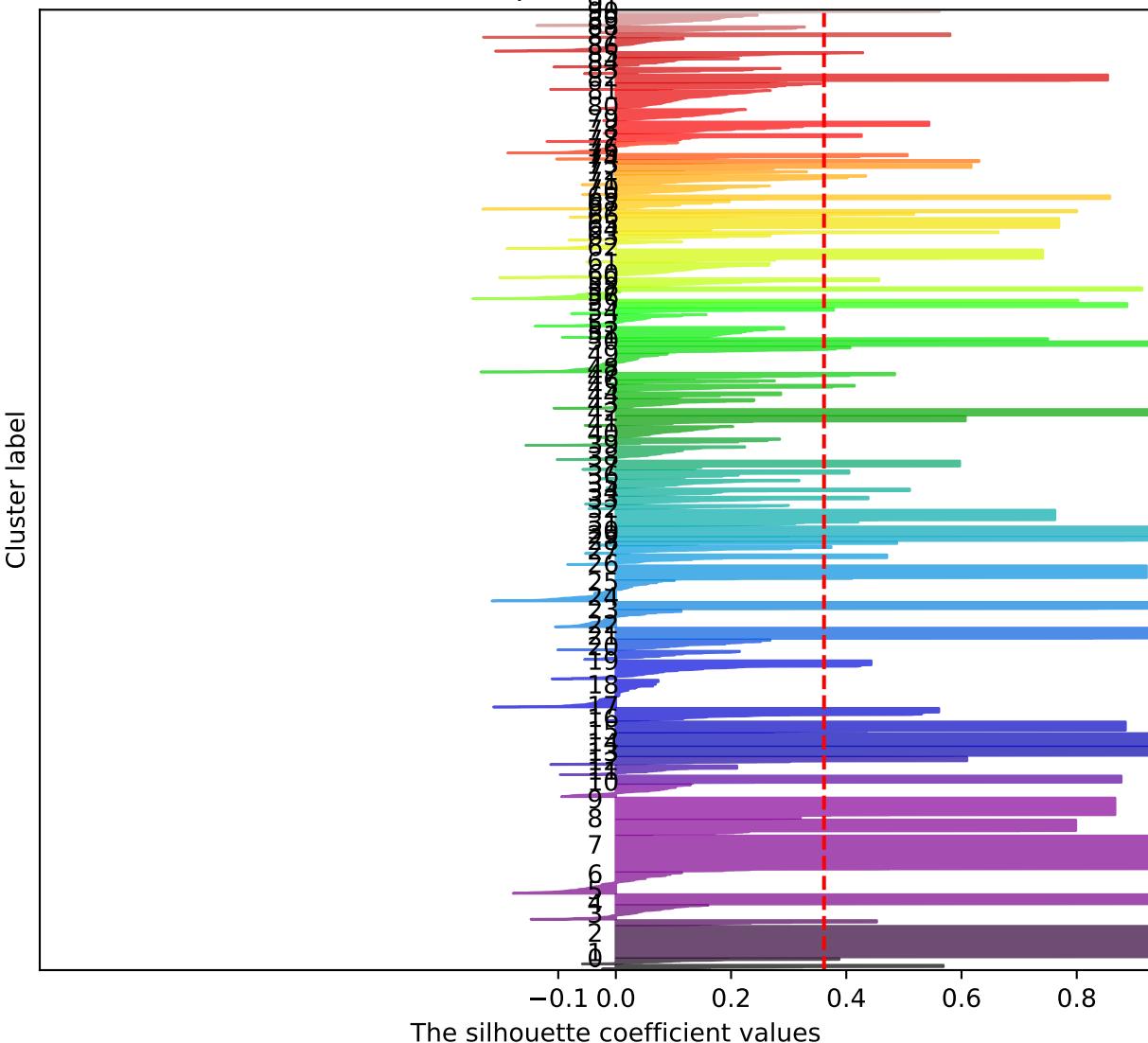


The visualization of the clustered data.

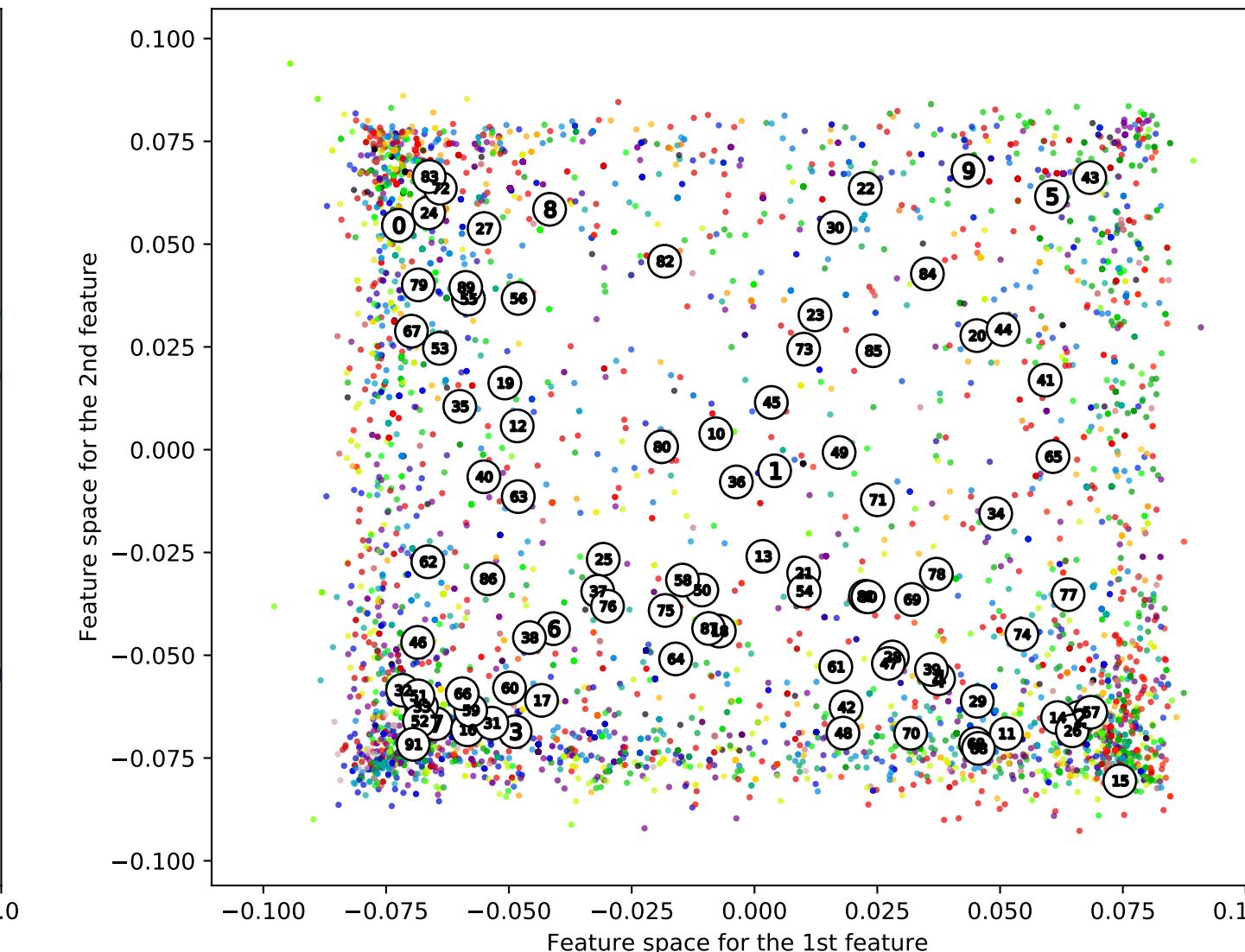


Silhouette analysis for KMeans clustering on sample data with n_clusters = 92 with Average Silhouette of: 0.36140015721321106

The silhouette plot for the various clusters.

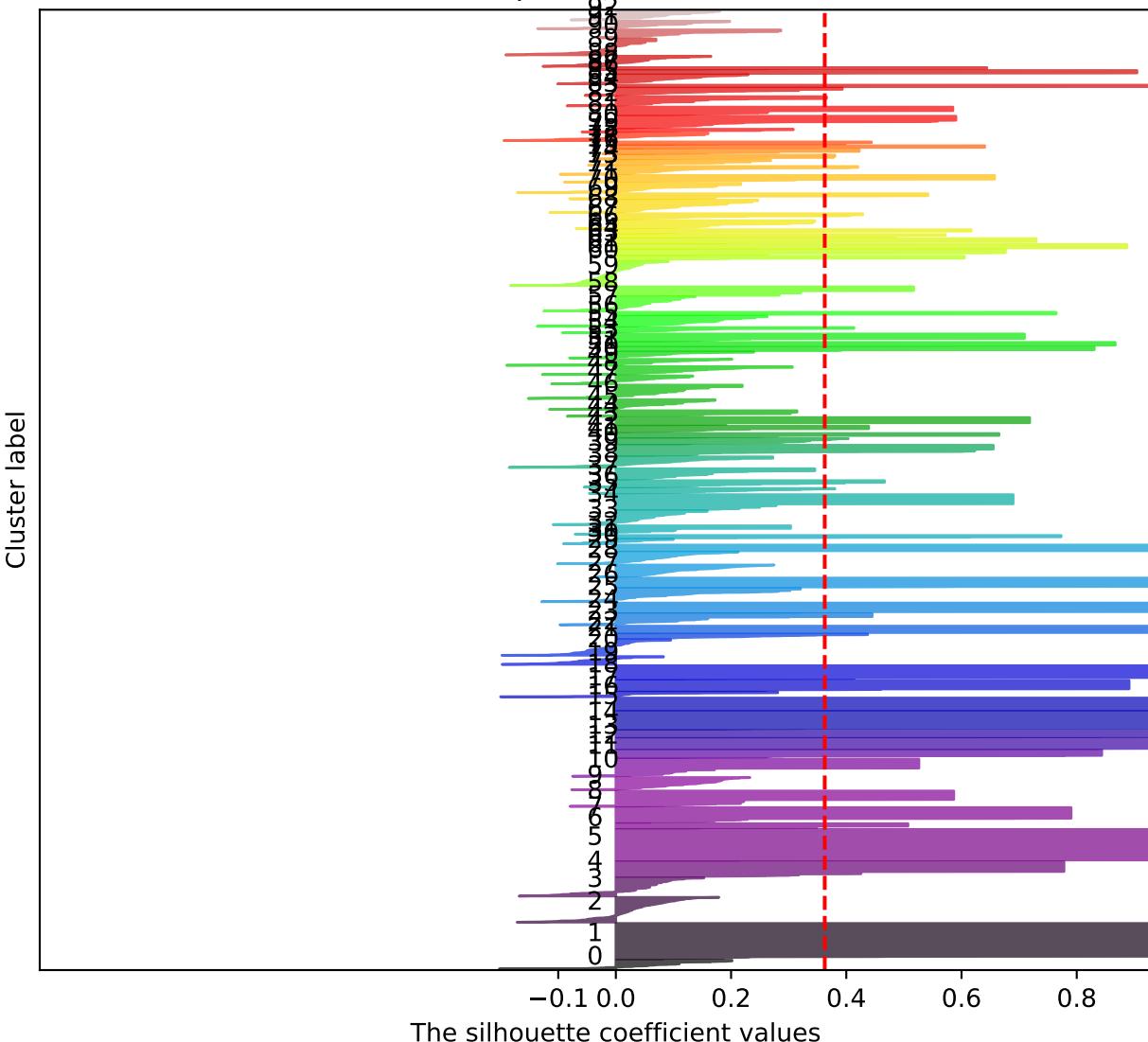


The visualization of the clustered data.

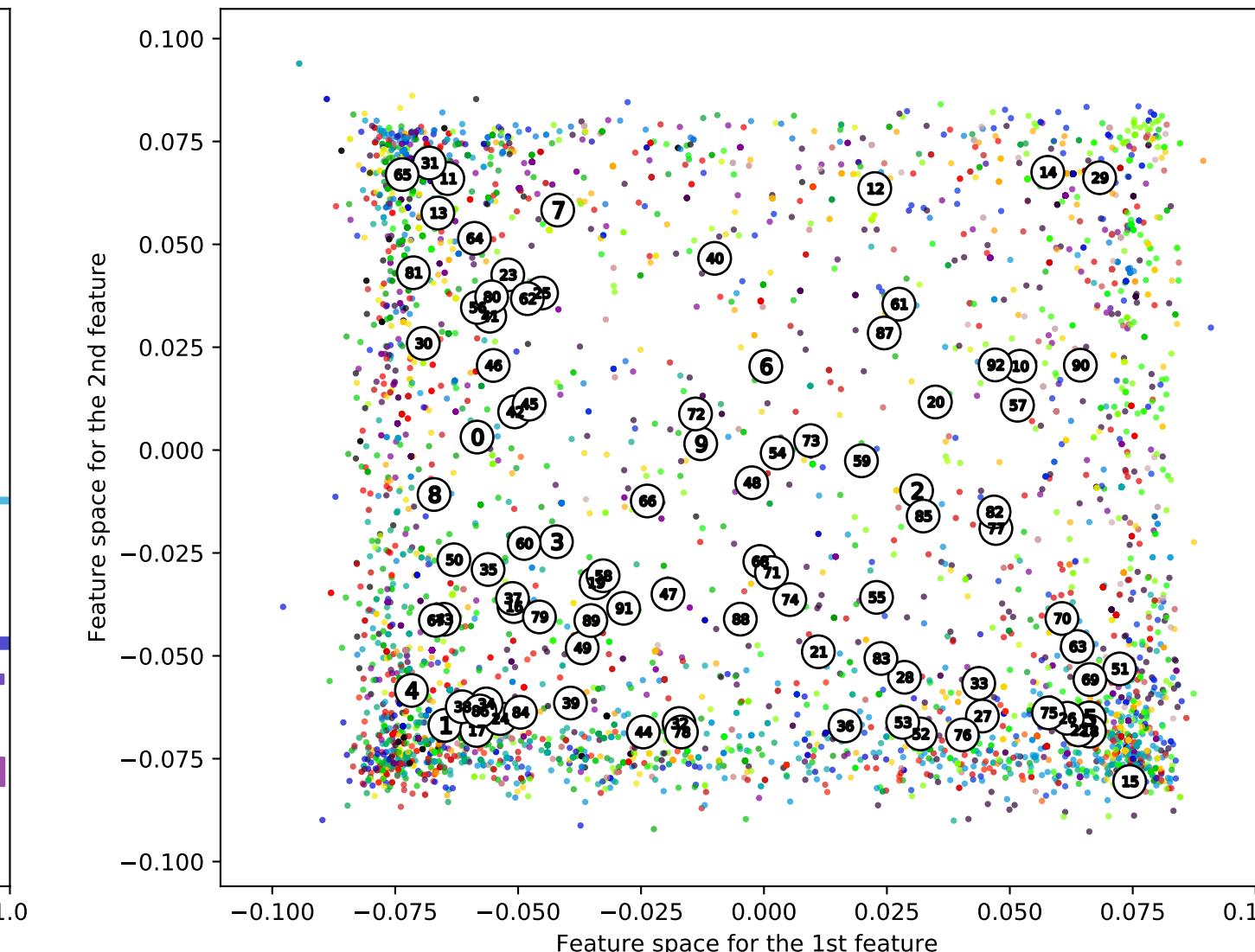


Silhouette analysis for KMeans clustering on sample data with n_clusters = 93 with Average Silhouette of: 0.3625730872154236

The silhouette plot for the various clusters.

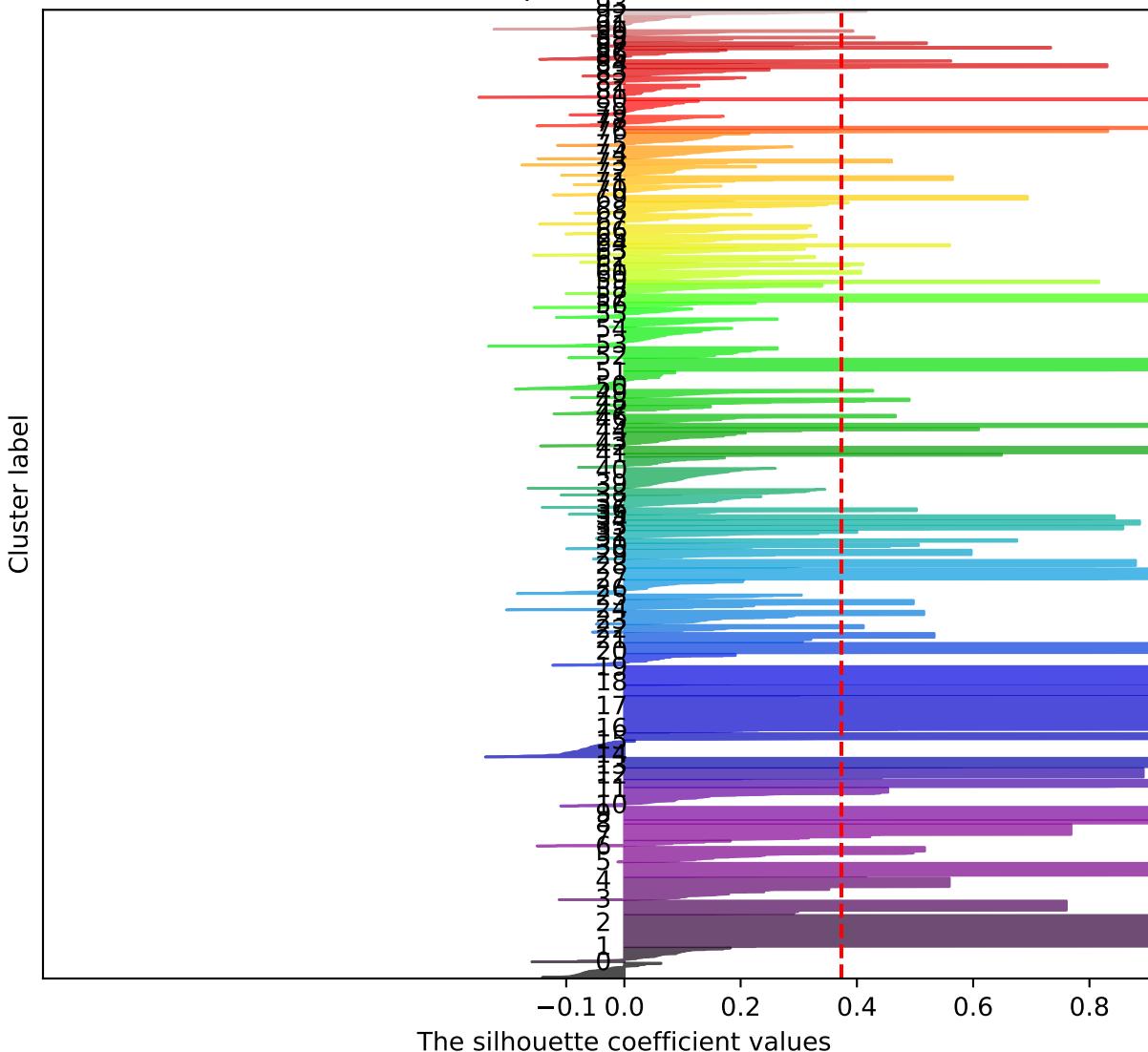


The visualization of the clustered data.

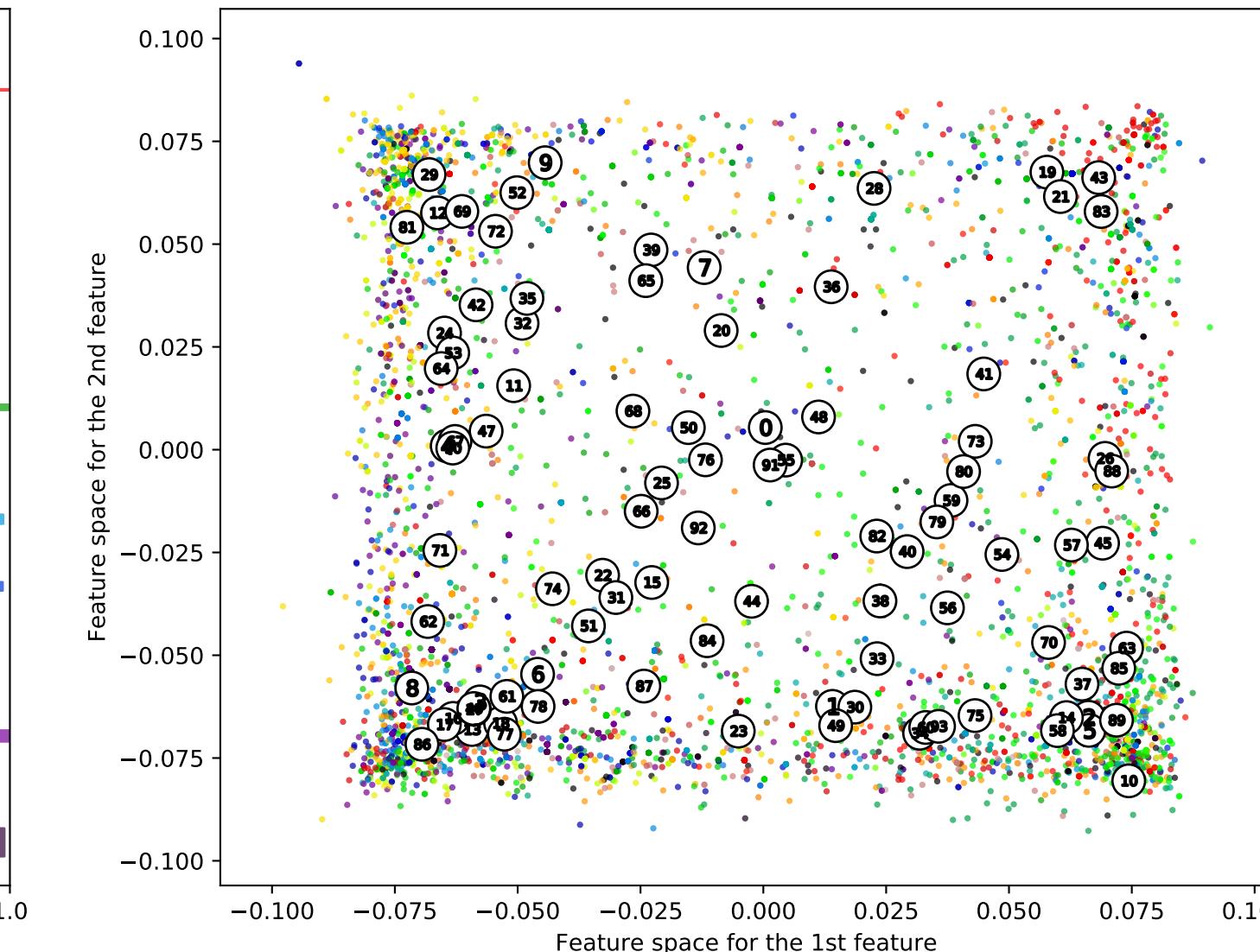


Silhouette analysis for KMeans clustering on sample data with n_clusters = 94 with Average Silhouette of: 0.37333500385284424

The silhouette plot for the various clusters.

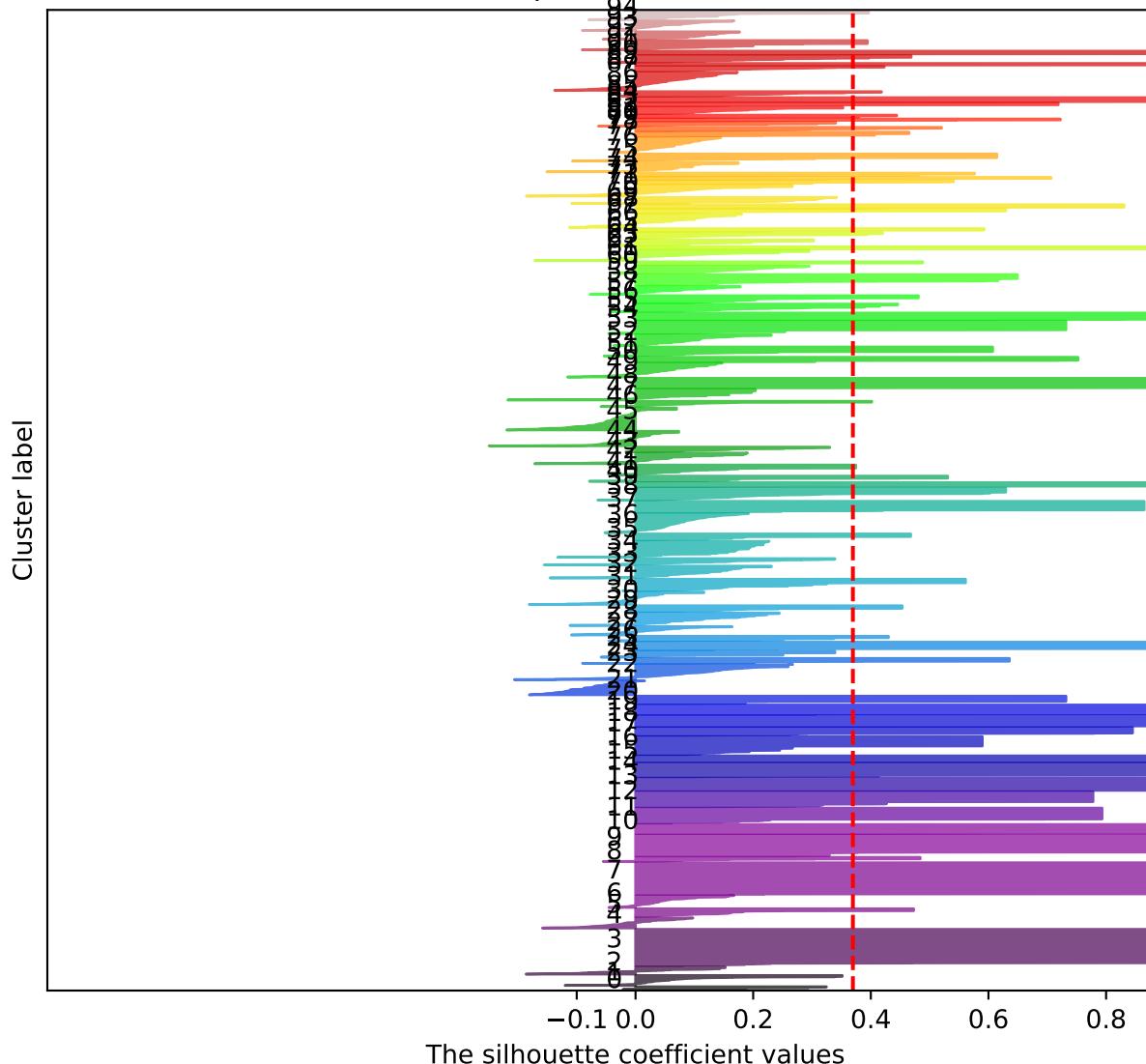


The visualization of the clustered data.

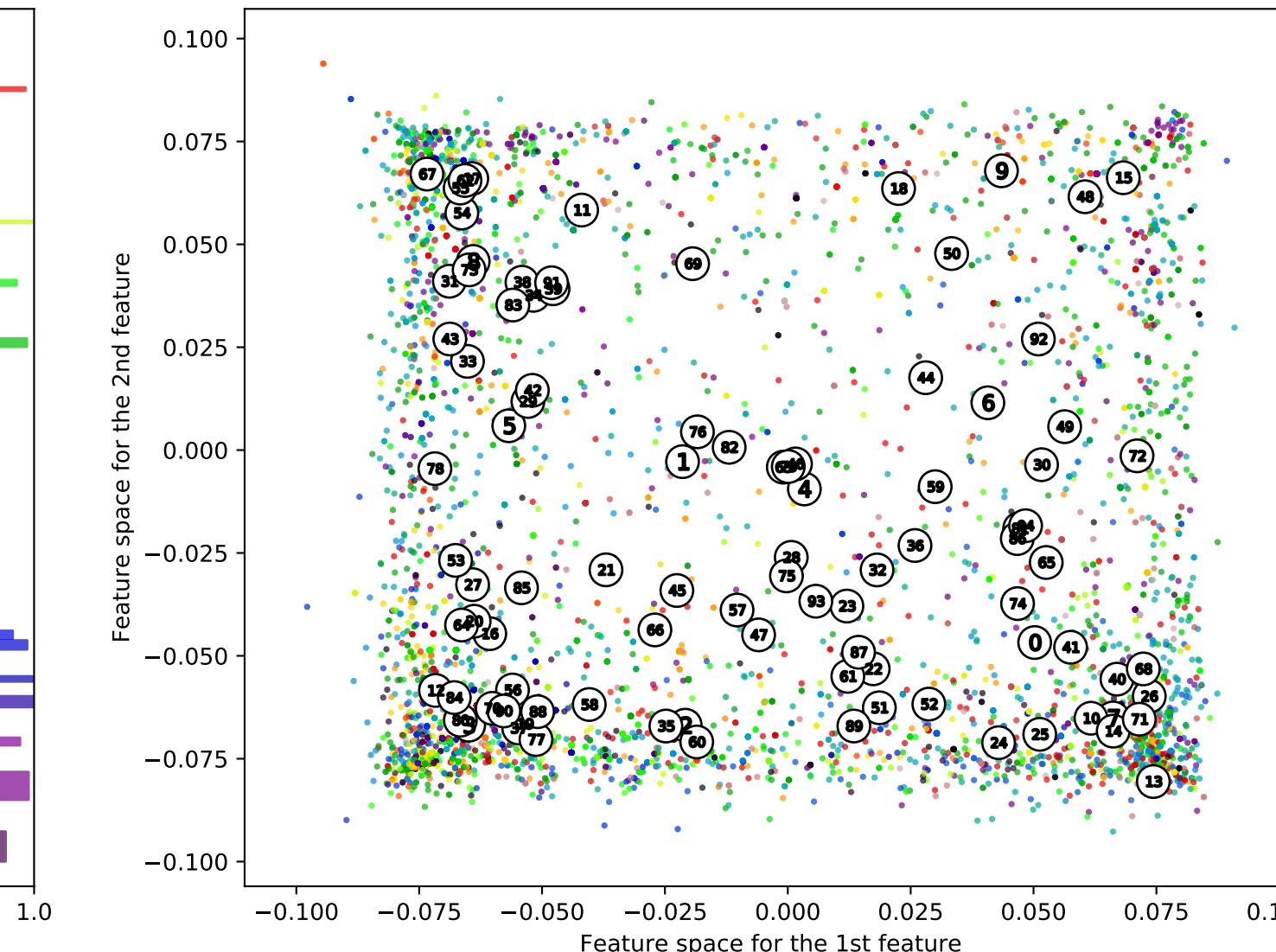


Silhouette analysis for KMeans clustering on sample data with n_clusters = 95 with Average Silhouette of: 0.369541198015213

The silhouette plot for the various clusters.

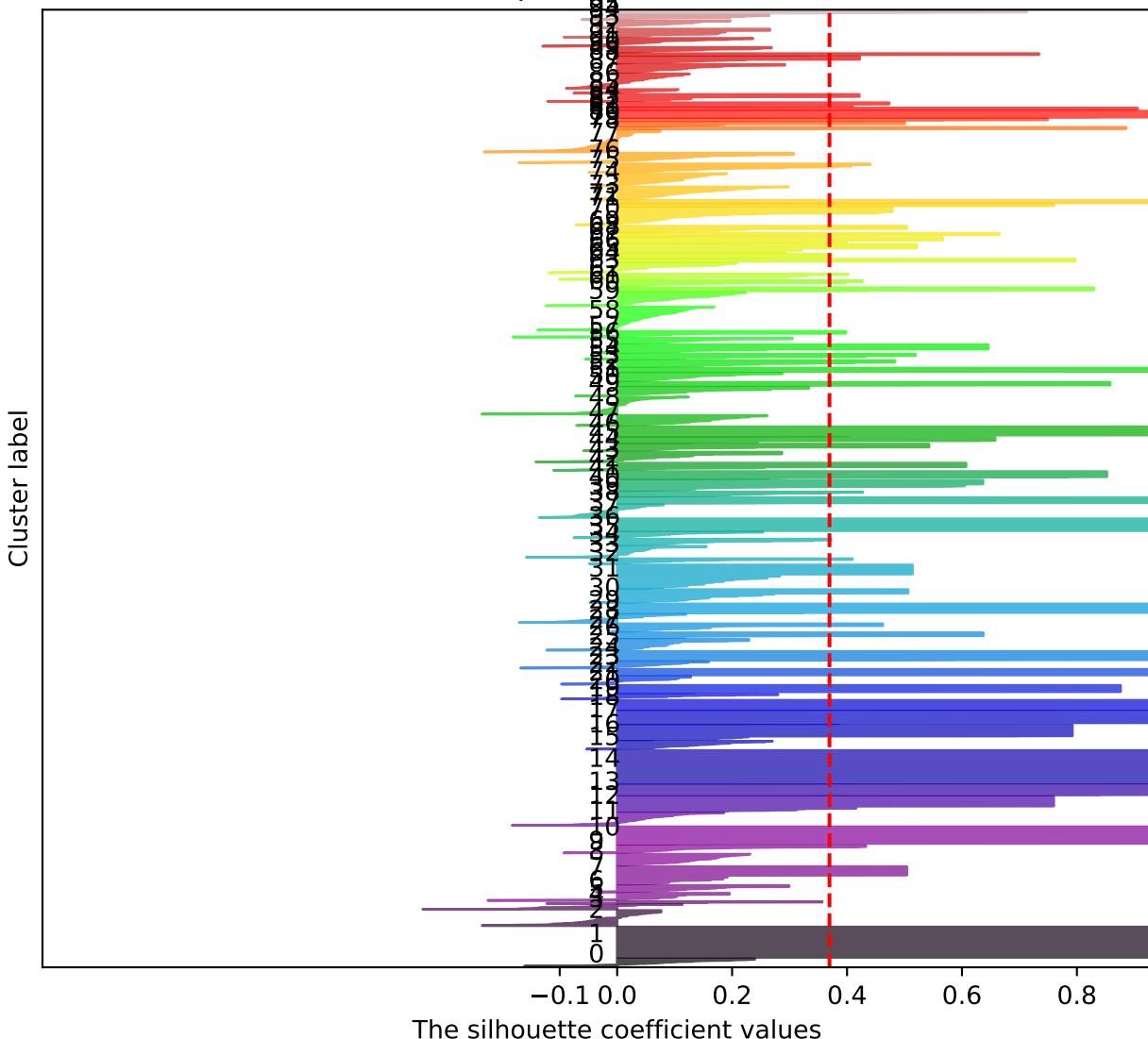


The visualization of the clustered data.

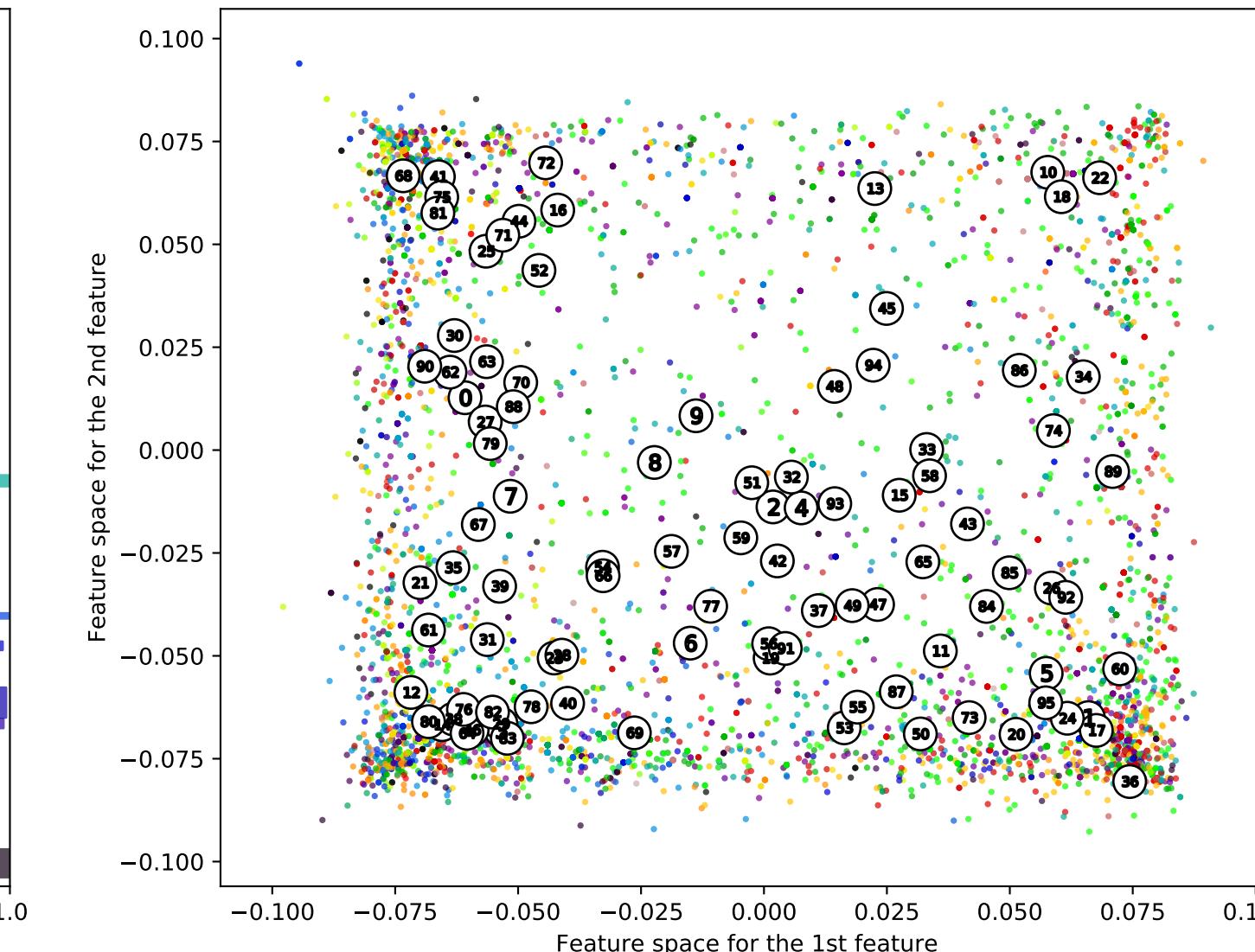


Silhouette analysis for KMeans clustering on sample data with n_clusters = 96 with Average Silhouette of: 0.3694905638694763

The silhouette plot for the various clusters.

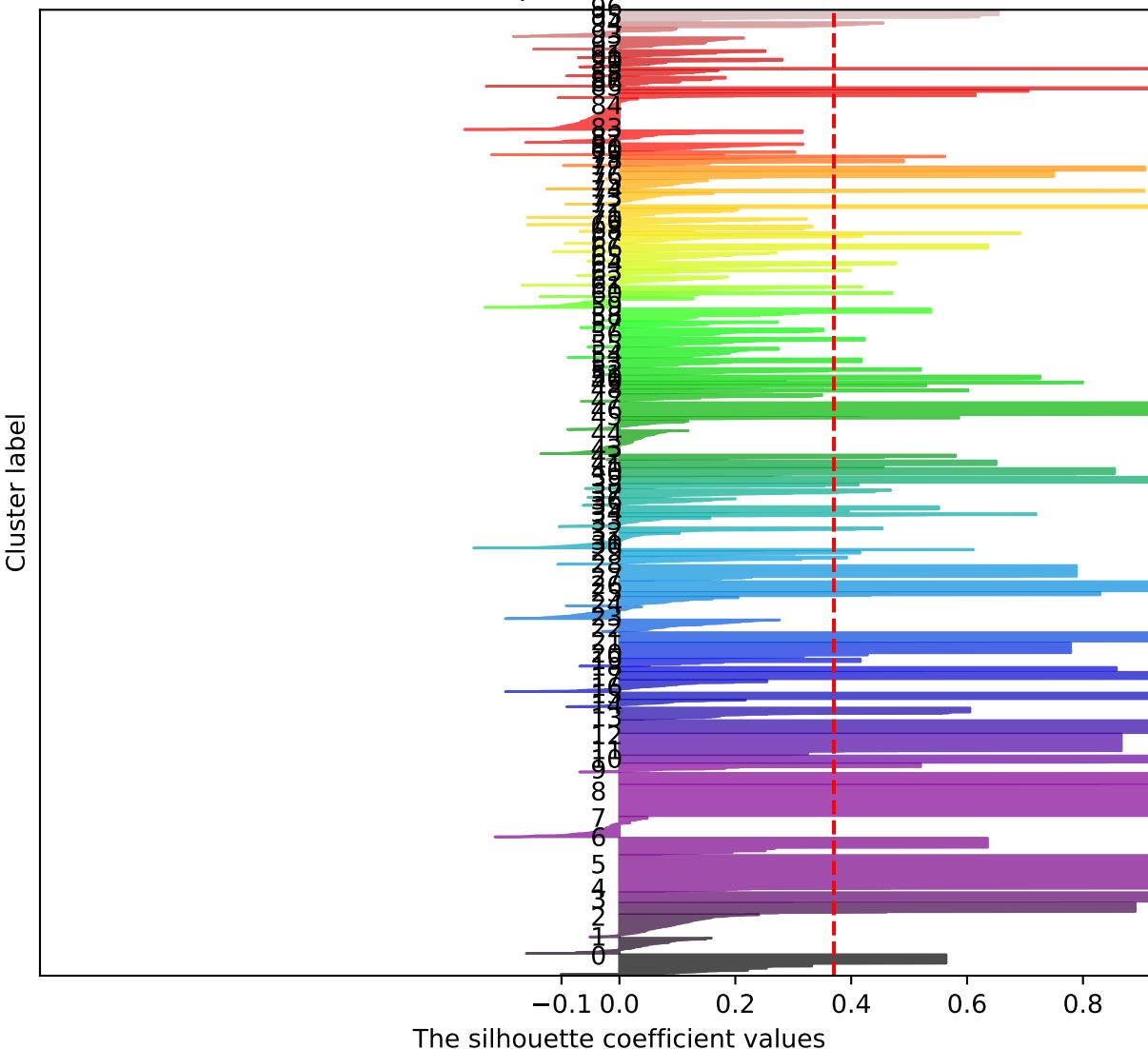


The visualization of the clustered data.

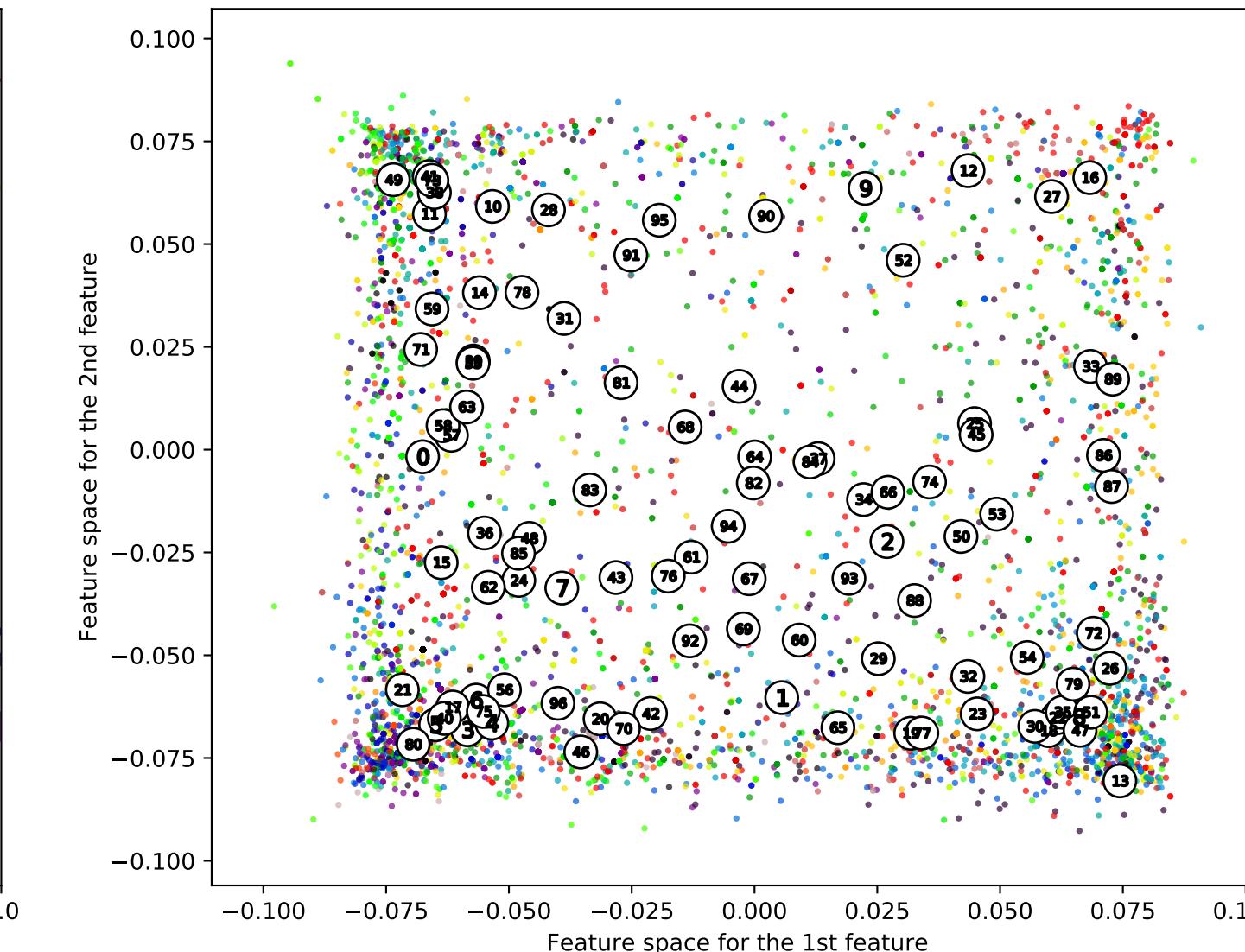


Silhouette analysis for KMeans clustering on sample data with n_clusters = 97 with Average Silhouette of: 0.37011250853538513

The silhouette plot for the various clusters.

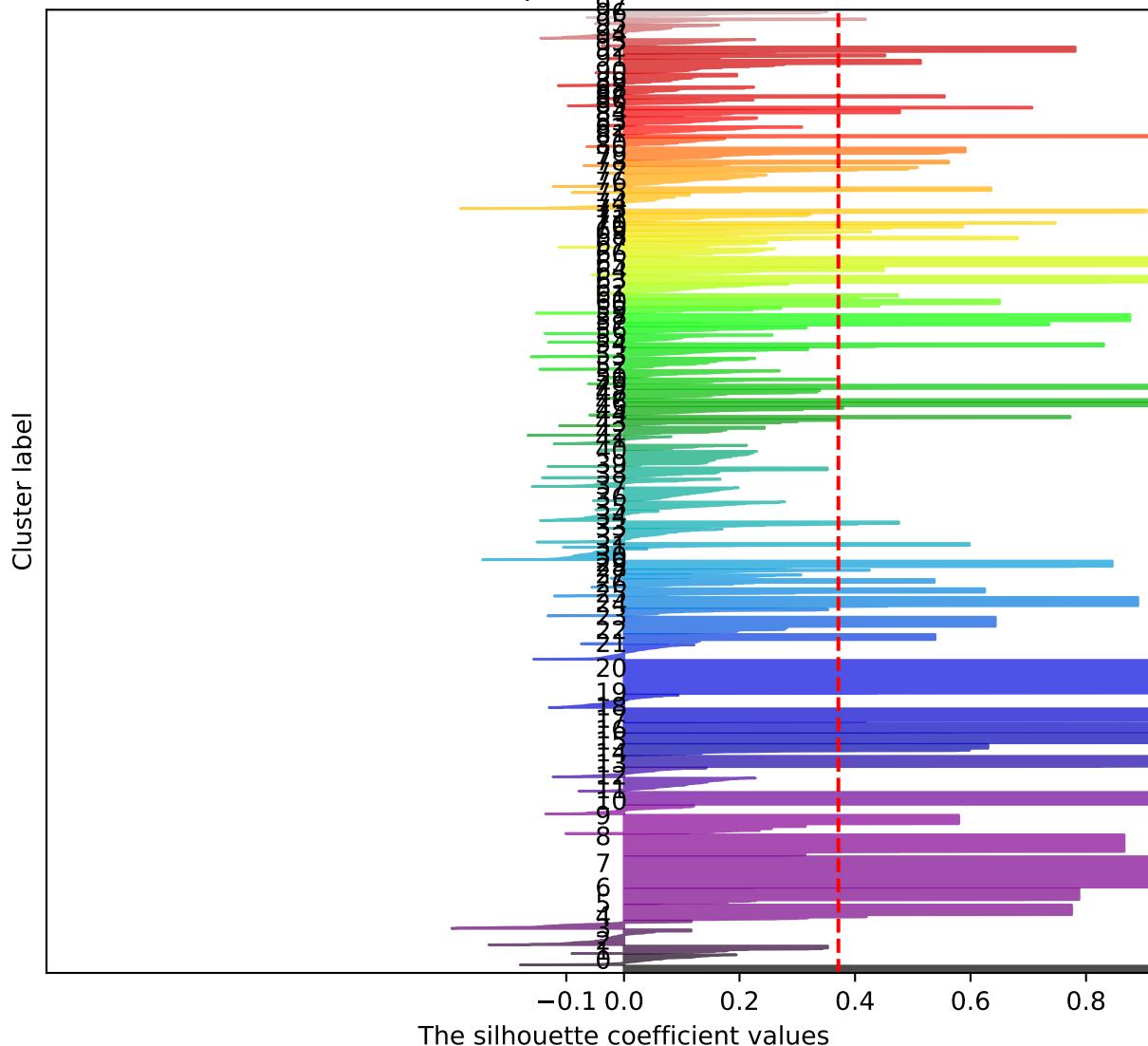


The visualization of the clustered data.

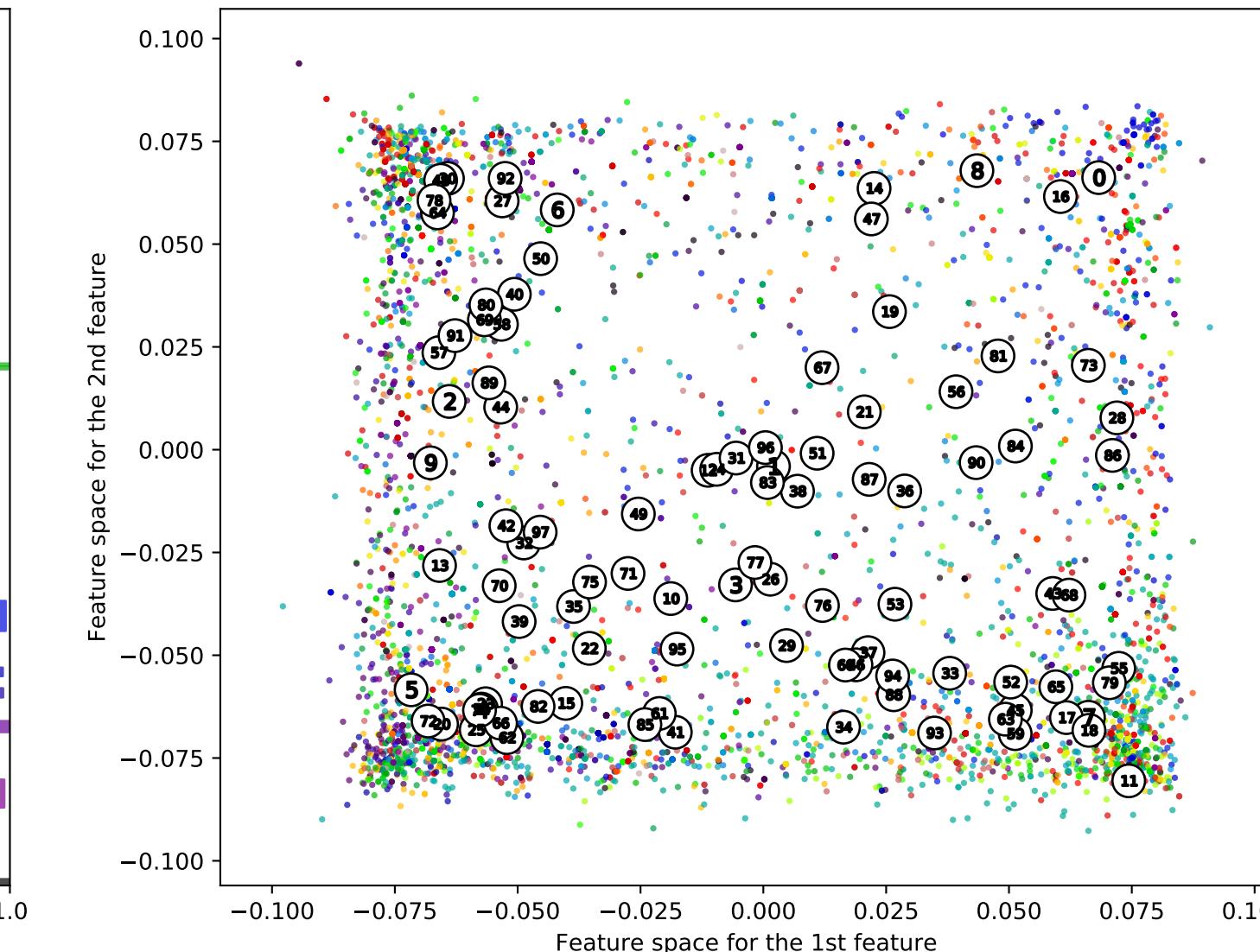


Silhouette analysis for KMeans clustering on sample data with n_clusters = 98 with Average Silhouette of: 0.37118449807167053

The silhouette plot for the various clusters.

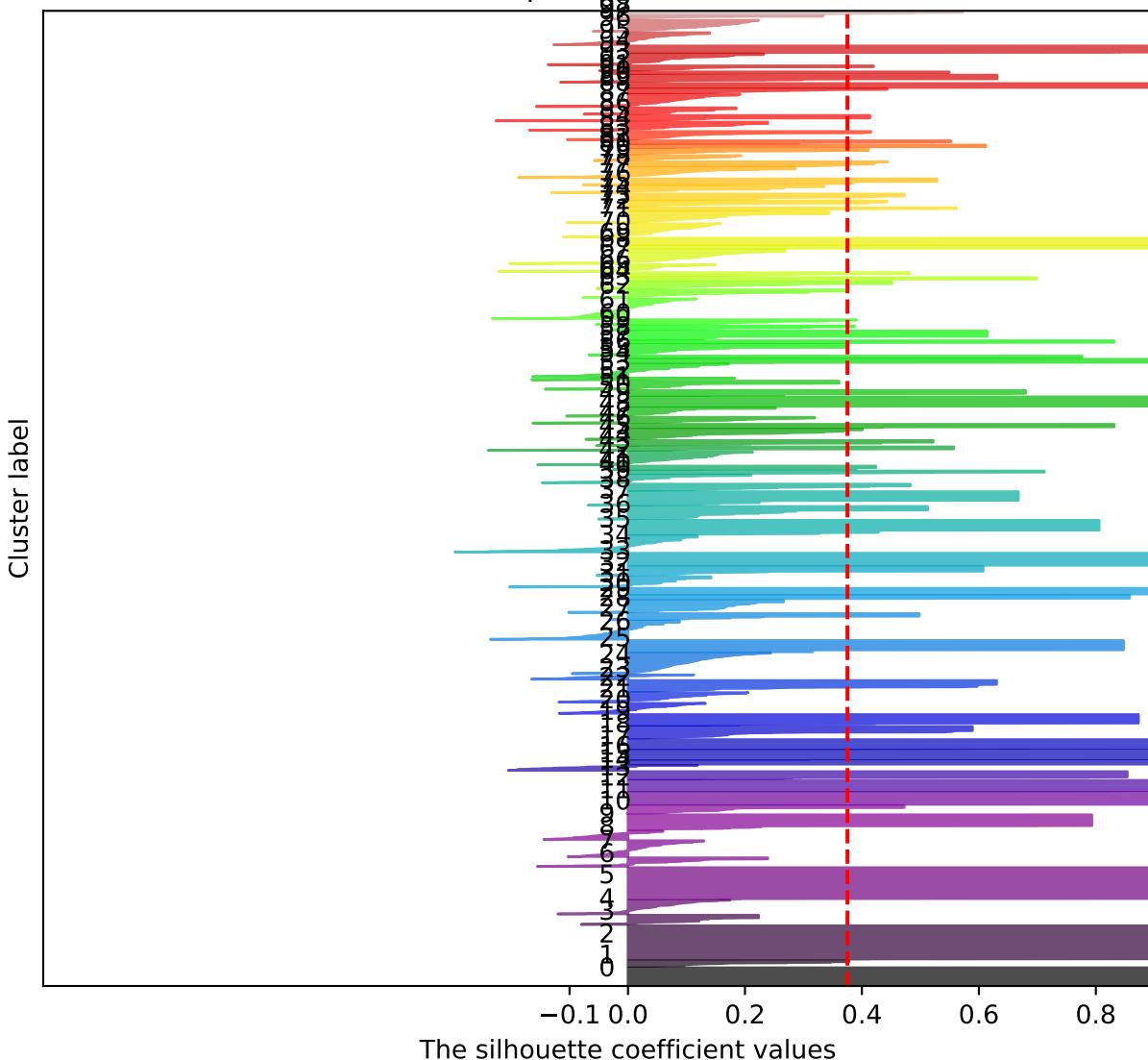


The visualization of the clustered data.

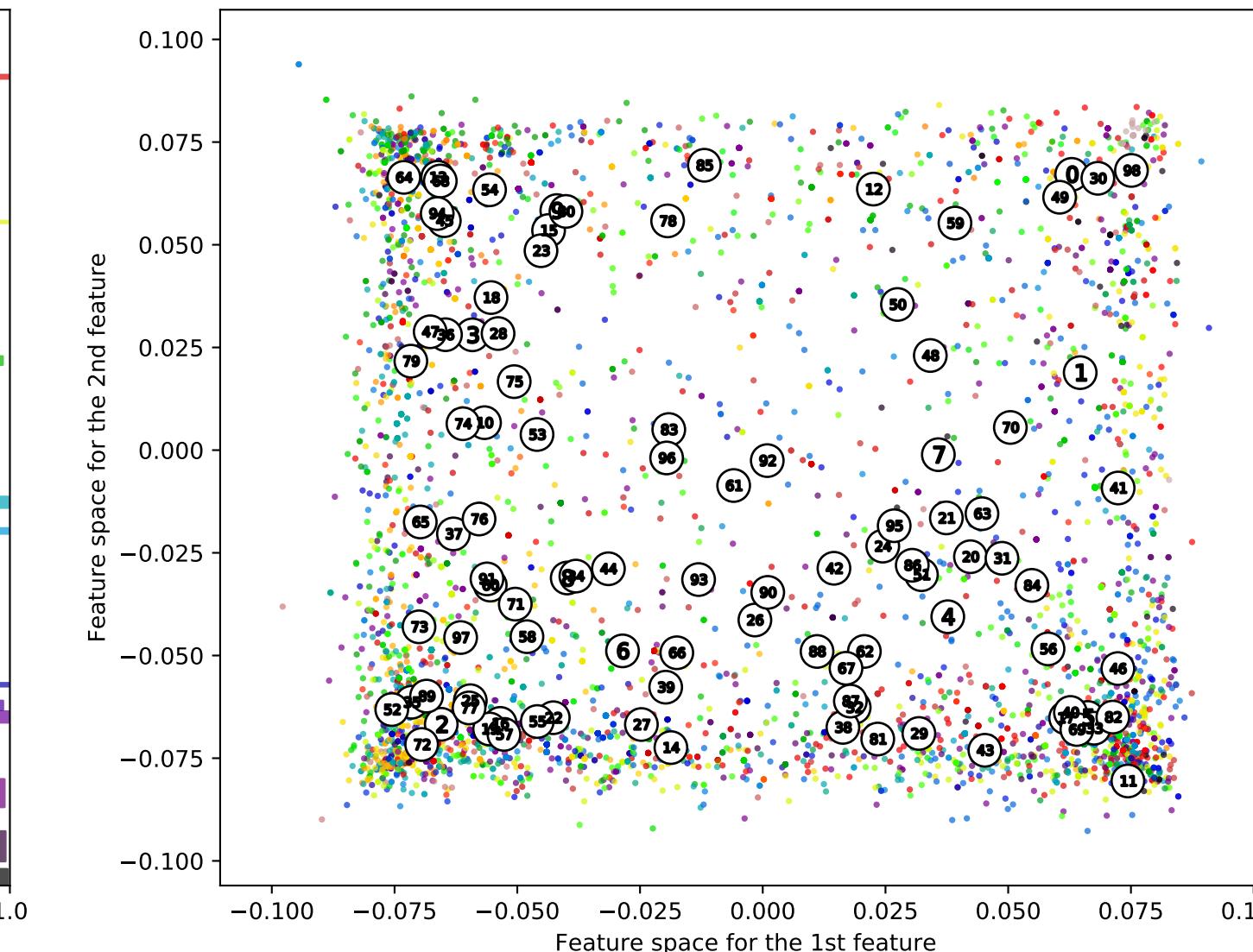


Silhouette analysis for KMeans clustering on sample data with n_clusters = 99 with Average Silhouette of: 0.3752332925796509

The silhouette plot for the various clusters.

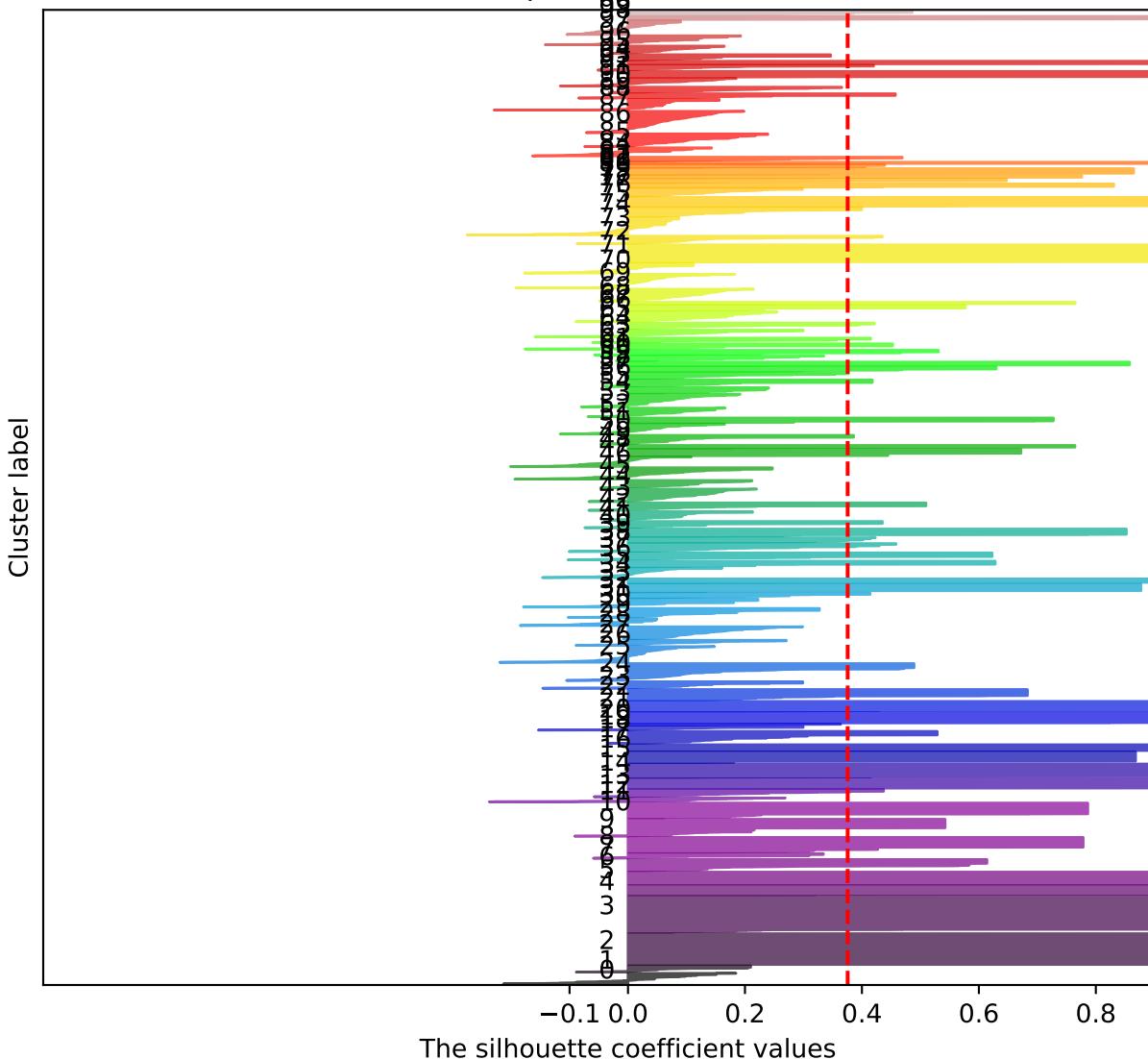


The visualization of the clustered data.



Silhouette analysis for KMeans clustering on sample data with n_clusters = 100 with Average Silhouette of: 0.3756504952907562

The silhouette plot for the various clusters.



The visualization of the clustered data.

