Supplementary results for manuscript he04ijcnn:

The experimental results of the five initialization methods on three synthetic data sets, with a varying number of output clusters K. I, Cmp, and Sep stand for the number of iterations K-Means used to reach convergence, *Cluster Compactness*, and *Cluster Separation* indices upon system convergence respectively. σ is the Gaussian constant used in Equation **??**. All measures are reported with means and standard deviations out of ten runs. Underlined values identify the best result that is significantly better than those of at least one competitors (t significance level 0.1).

Data Set: S01 (00-00), $\sigma = 0.5$

		R-MEAN	R-SEL	SCS	KKZ	KR
$K = 5$	I	9.40 ± 2.63	10.50 ± 5.80	8.60 ± 2.95	10.30 ± 3.37	11.70 ± 3.50
	Cmp	0.4194 ± 0.0154	0.4158 ± 0.0091	0.4044 ± 0.0187	0.4072 ± 0.0149	0.4197 ± 0.0084
	Sep	0.5909 ± 0.0139	0.5940 ± 0.0158	0.5828 ± 0.0172	0.5817 ± 0.0114	0.5933 ± 0.0103
$K = 10$	I	13.90 ± 4.36	9.60 ± 4.25	10.30 ± 3.74	10.60 ± 3.03	13.10 ± 5.90
	Cmp	0.2235 ± 0.0062	0.2301 ± 0.0073	0.2179 ± 0.0061	0.2150 ± 0.0035	0.2207 ± 0.0057
	Sep	0.6315 ± 0.0152	0.6111 ± 0.0252	0.6103 ± 0.0171	0.6073 ± 0.0128	0.6166 ± 0.0123
$K = 15$	I	11.20 ± 1.55	7.70 ± 2.26	14.70 ± 4.62	12.10 ± 2.51	11.70 ± 6.06
	Cmp	0.1574 ± 0.0155	0.1504 ± 0.0115	0.1461 ± 0.0058	0.1482 ± 0.0075	0.1572 ± 0.0103
	Sep	0.6891 ± 0.0375	0.6316 ± 0.0189	0.6004 ± 0.0172	0.6071 ± 0.0131	0.6311 ± 0.0295
$K = 30$	I	37.40 ± 5.62	14.70 ± 3.06	17.70 ± 1.77	16.90 ± 3.21	19.70 ± 4.83
	Cmp	0.1106 ± 0.0006	0.1152 ± 0.0020	0.1147 ± 0.0010	0.1145 ± 0.0009	0.1134 ± 0.0006
	Sep	0.7385 ± 0.0035	0.6468 ± 0.0259	0.6178 ± 0.0066	0.6223 ± 0.0132	0.6558 ± 0.0221
$K = 60$	I	79.30 ± 10.95	28.90 ± 9.42	24.70 ± 4.06	28.70 ± 5.17	31.60 ± 8.36
	Cmp	0.0895 ± 0.0004	0.0921 ± 0.0006	0.0928 ± 0.0003	0.0928 ± 0.0005	0.0909 ± 0.0018
	Sep	0.7418 ± 0.0049	0.6599 ± 0.0201	0.6110 ± 0.0068	0.6109 ± 0.0081	0.6602 ± 0.0162

Data Set: S13 (02-02), $\sigma = 0.5$

		R-MEAN	R-SEL	SCS	KKZ	KR
$K = 5$	I	12.90 ± 5.20	14.90 ± 4.01	12.60 ± 4.33	15.80 ± 4.69	12.30 ± 3.23
	Cmp	0.4436 ± 0.0013	0.4434 ± 0.0011	0.4447 ± 0.0078	0.4434 ± 0.0014	0.4437 ± 0.0013
	Sep	0.5843 ± 0.0037	0.5836 ± 0.0037	0.5834 ± 0.0104	0.5833 ± 0.0043	0.5850 ± 0.0033
$K = 10$	I	17.30 ± 5.29	14.30 ± 3.47	16.30 ± 3.09	15.30 ± 3.30	18.40 ± 3.24
	Cmp	0.3020 ± 0.0048	0.3006 ± 0.0051	0.3014 ± 0.0039	0.3013 ± 0.0044	0.2993 ± 0.0018
	Sep	0.6103 ± 0.0104	0.6075 ± 0.0129	0.6041 ± 0.0123	0.5987 ± 0.0120	0.6047 ± 0.0091
$K = 15$	I	24.70 ± 8.10	22.70 ± 9.91	20.90 ± 7.50	20.60 ± 6.47	20.50 ± 13.13
	Cmp	0.2372 ± 0.0047	0.2373 ± 0.0057	0.2388 ± 0.0042	0.2388 ± 0.0039	0.2377 ± 0.0043
	Sep	0.6217 ± 0.0037	0.6159 ± 0.0110	0.6078 ± 0.0104	0.6077 ± 0.0062	0.6191 ± 0.0070
$K = 30$	I	43.70 ± 5.56	26.70 ± 9.91	29.50 ± 6.85	25.70 ± 4.14	35.70 ± 13.63
	Cmp	0.1817 ± 0.0004	0.1820 ± 0.0006	0.1827 ± 0.0003	0.1831 ± 0.0006	0.1814 ± 0.0010
	Sep	0.6284 ± 0.0050	0.6134 ± 0.0065	0.6020 ± 0.0049	0.5988 ± 0.0045	0.6190 ± 0.0064
$K = 60$	I	71.20 ± 10.22	40.60 ± 13.36	36.90 ± 8.46	40.50 ± 7.28	39.60 ± 14.15
	Cmp	0.1333 ± 0.0003	0.1333 ± 0.0005	0.1338 ± 0.0003	0.1337 ± 0.0002	0.1331 ± 0.0005
	Sep	0.6263 ± 0.0035	0.6122 ± 0.0046	0.6005 ± 0.0020	0.6023 ± 0.0036	0.6171 ± 0.0050

Data Set: S25 (04-04), $\sigma = 0.5$

		R-MEAN	R-SEL	SCS	KKZ	KR
$K = 5$	I	11.80 ± 3.08	15.80 ± 6.46	14.60 ± 3.17	14.00 ± 4.50	13.80 ± 4.13
	Cmp	0.4541 ± 0.0004	0.4541 ± 0.0004	0.4543 ± 0.0001	0.4542 ± 0.0004	0.4542 ± 0.0004
	Sep	0.5823 ± 0.0043	0.5834 ± 0.0027	0.5793 ± 0.0048	0.5773 ± 0.0047	0.5816 ± 0.0043
$K = 10$	I	26.00 ± 10.50	20.80 ± 10.22	19.00 ± 6.68	20.20 ± 4.94	20.90 ± 6.08
	Cmp	0.3188 ± 0.0008	0.3193 ± 0.0026	0.3199 ± 0.0023	0.3187 ± 0.0009	0.3185 ± 0.0011
	Sep	0.5953 ± 0.0033	0.5917 ± 0.0087	0.5861 ± 0.0073	0.5882 ± 0.0069	0.5905 ± 0.0087
$K = 15$	I	23.70 ± 8.63	30.10 ± 8.95	26.40 ± 5.56	29.90 ± 6.89	31.30 ± 9.53
	Cmp	0.2593 ± 0.0029	0.2586 ± 0.0017	0.2593 ± 0.0023	0.2592 ± 0.0019	0.2587 ± 0.0020
	Sep	0.6050 ± 0.0032	0.6025 ± 0.0034	0.5990 ± 0.0063	0.5980 ± 0.0039	0.6006 ± 0.0034
$K = 30$	I	47.90 ± 10.90	33.00 ± 12.52	32.20 ± 5.53	34.00 ± 10.64	37.50 ± 10.95
	Cmp	0.1852 ± 0.0006	0.1856 ± 0.0008	0.1859 ± 0.0007	0.1856 ± 0.0007	0.1857 ± 0.0007
	Sep	0.6049 ± 0.0050	0.5992 ± 0.0077	0.5905 ± 0.0057	0.5925 ± 0.0048	0.6008 ± 0.0065
$K = 60$	I	77.40 ± 9.34	39.80 ± 14.29	36.30 ± 10.42	33.70 ± 8.56	43.90 ± 9.95
	Cmp	0.1328 ± 0.0002	0.1328 ± 0.0005	0.1329 ± 0.0003	0.1330 ± 0.0003	0.1327 ± 0.0003
	Sep	0.6095 ± 0.0030	0.6001 ± 0.0053	0.5945 ± 0.0033	0.5915 ± 0.0018	0.6004 ± 0.0043

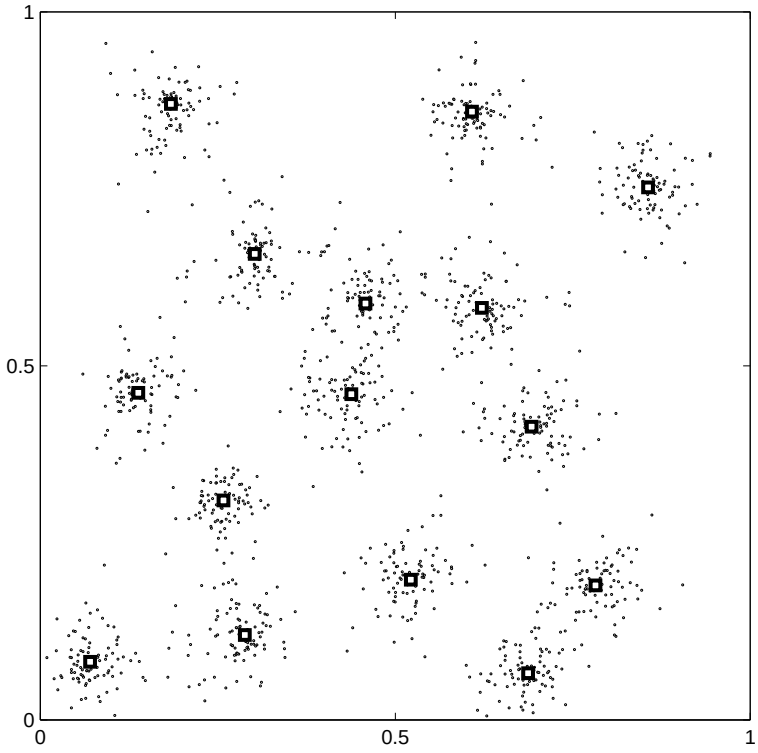

Figure 1: Data set S01 (00-00, with $v = 0.05, r = 0.0$)

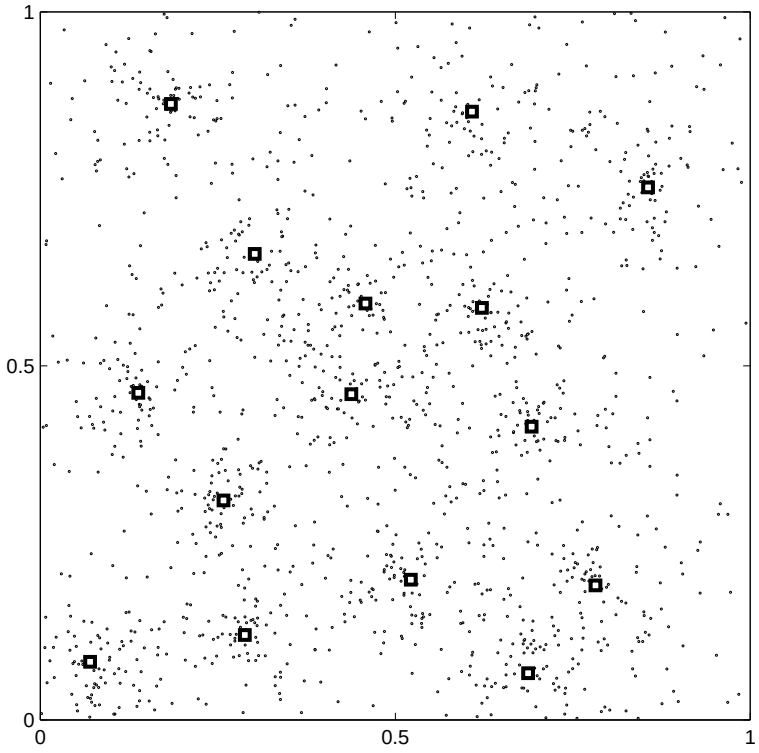

Figure 2: Data set S13 (03-03, with $v = 0.10, r = 0.2$)

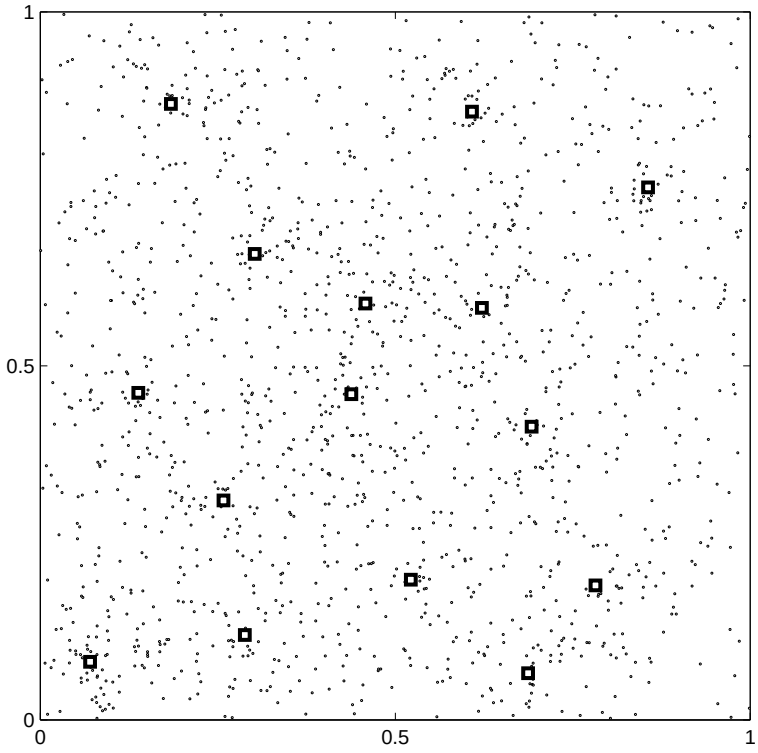

Figure 3: Data set S25 (04-04, with $v = 0.15, r = 0.4$)