

1 Handling Noise in Data

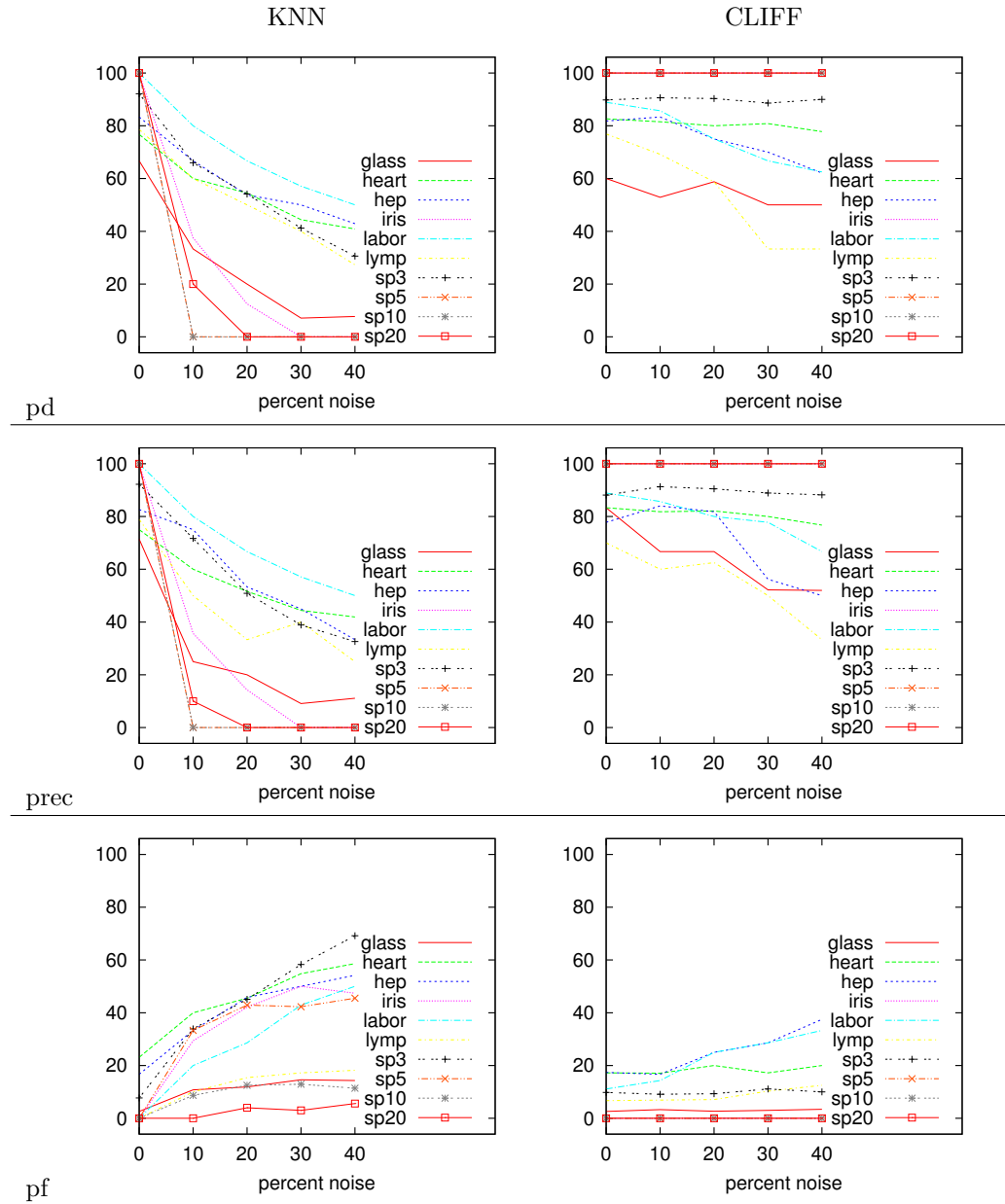


Figure 1: Effects of noise.

2 Is CLIFF better than Others?

		percent noise					
		0	10	20	30	40	sum
breast-cancer	knn	4	-2	-6	-1	-1	-1
	knn+cnr	4	-2	-1	2	5	1
	knn+mcs	-5	-9	-5	6	2	-2
	knn+psc	-8	-11	-12	-5	0	-7
ecoli	knn	5	-64	-66	-60	-50	-47
	knn+cnr	-23	-64	-66	-60	-50	-52
	knn+mcs	-23	-54	-60	-52	-46	-47
	knn+psc	-37	-64	-66	-60	-50	-55
glass	knn	6	-19	-38	-42	-42	-27
	knn+cnr	-10	-19	-27	-31	-30	-23
	knn+mcs	-10	-22	-27	-19	-18	-19
	knn+psc	-24	-45	-51	-50	-50	-44
heartc	knn	-5	-21	-25	-36	-36	-24
	knn+cnr	-8	-8	-19	-23	-22	-16
	knn+mcs	-28	-29	-27	-32	-27	-28
	knn+psc	-32	-46	-48	-46	-45	-43
hepatitis	knn	1	-16	-21	-20	-19	-15
	knn+cnr	-4	-11	-12	-12	-12	-10
	knn+mcs	-18	-31	-25	-20	-6	-20
	knn+psc	-20	-31	-30	-24	-19	-24
iris	knn	0	-62	-87	-100	-100	-69
	knn+cnr	-9	-30	-50	-61	-66	-43
	knn+mcs	-9	-42	-58	-38	-44	-38
	knn+psc	-9	-71	-87	-91	-100	-71
labor	knn	11	-5	-8	-9	-12	-4
	knn+cnr	2	-5	-8	-6	-2	-3
	knn+mcs	11	-10	-12	-16	-2	-5
	knn+psc	11	-23	-8	-22	-12	-10
lymph	knn	1	-9	-8	6	-5	-3
	knn+cnr	-10	-13	-15	10	0	-5
	knn+mcs	-8	-19	-20	6	-4	-9
	knn+psc	-18	-35	-30	-10	-8	-20
vote	knn	2	-24	-36	-47	-59	-32
	knn+cnr	0	-4	-9	-27	-34	-14
	knn+mcs	-19	-38	-42	-38	-38	-35
	knn+psc	-17	-61	-66	-62	-64	-54
spectra3	knn	0	-100	-100	-100	-100	-80
	knn+cnr	0	-81	-72	-88	-95	-67
	knn+mcs	0	-81	0	0	0	-16
	knn+psc	0	-100	-100	-100	-100	-80
spectra5	knn	0	-100	-100	-100	-100	-80
	knn+cnr	0	-100	-100	-100	-100	-80
	knn+mcs	0	-75	-66	-25	0	-33
	knn+psc	0	-100	-100	-100	-100	-80
spectra10	knn	0	-80	-100	-100	-100	-76
	knn+cnr	0	-50	-100	-100	-100	-70
	knn+mcs	0	0	0	0	0	0
	knn+psc	0	-100	-100	-100	-100	-80
spectra20	knn	0	-100	-100	-100	-100	-80
	knn+cnr	0	-100	-100	-100	-100	-80
	knn+mcs	0	-50	-66	-66	-50	-46
	knn+psc	0	-100	-100	-100	-100	-80
mean		0	0	-5	-44	-47	-82

Figure 2: PDs: other - (knn+cliff). Note: *negative* values means CLIFF is performing *better*.

		percent noise				sum	
		0	10	20	30		40
breast-cancer	knn	0	4	3	2	3	2
	knn+cnr	0	2	-1	-3	-2	0
	knn+mcs	11	11	6	-5	0	4
	knn+psc	13	9	10	5	2	7
ecoli	knn	0	5	6	8	7	5
	knn+cnr	0	3	4	4	5	3
	knn+mcs	0	3	3	3	2	2
	knn+psc	1	5	7	6	7	5
glass	knn	0	7	9	11	10	7
	knn+cnr	1	2	5	7	6	4
	knn+mcs	2	6	5	7	5	5
	knn+psc	6	11	11	11	12	10
heartc	knn	5	22	25	37	38	25
	knn+cnr	8	9	18	23	23	16
	knn+mcs	26	30	26	34	28	28
	knn+psc	32	47	46	48	45	43
hepatitis	knn	0	16	20	21	16	14
	knn+cnr	4	11	8	14	12	9
	knn+mcs	17	31	25	19	5	19
	knn+psc	21	31	25	25	19	24
iris	knn	0	29	42	50	47	33
	knn+cnr	4	9	20	27	30	18
	knn+mcs	4	20	23	13	19	15
	knn+psc	4	31	38	42	45	32
labor	knn	-11	5	3	14	16	5
	knn+cnr	-11	2	8	11	6	3
	knn+mcs	-11	7	8	21	6	6
	knn+psc	-11	14	8	27	16	10
lymph	knn	-6	3	8	6	5	3
	knn+cnr	-6	3	0	4	1	0
	knn+mcs	-6	5	10	7	5	4
	knn+psc	-3	11	14	11	6	7
vote	knn	-2	24	35	47	59	32
	knn+cnr	1	5	9	20	33	13
	knn+mcs	19	38	42	37	37	34
	knn+psc	17	61	66	62	64	54
spectra3	knn	0	33	42	42	45	32
	knn+cnr	0	20	23	26	30	19
	knn+mcs	0	9	0	0	0	1
	knn+psc	0	31	44	50	40	33
spectra5	knn	0	8	12	12	11	8
	knn+cnr	0	5	8	11	7	6
	knn+mcs	0	3	2	0	0	1
	knn+psc	0	8	12	12	8	8
spectra10	knn	0	0	4	3	5	2
	knn+cnr	0	0	0	0	2	0
	knn+mcs	0	0	0	0	0	0
	knn+psc	0	0	3	2	5	2
spectra20	knn	0	0	0	2	2	0
	knn+cnr	0	0	0	0	0	0
	knn+mcs	0	0	0	0	0	0
	knn+psc	0	0	0	2	2	0
mean		0	0	2	12	14	27

Figure 3: PFs: other - (knn+cliff). Note: *positive* values means CLIFF is performing *better*.

		percent noise					
		0	10	20	30	40	sum
breast-cancer	knn	0	-4	-14	-11	-8	-7
	knn+cnr	-2	-2	-4	-4	3	-1
	knn+mcs	-13	-12	-16	0	0	-8
	knn+psc	-18	-19	-21	-12	-11	-16
ecoli	knn	-8	-75	-75	-66	-68	-58
	knn+cnr	-37	-75	-75	-66	-68	-64
	knn+mcs	-43	-60	-65	-52	-62	-56
	knn+psc	-48	-75	-75	-66	-68	-66
glass	knn	-11	-41	-46	-43	-40	-36
	knn+cnr	-30	-33	-34	-32	-32	-32
	knn+mcs	-33	-39	-35	-22	-18	-29
	knn+psc	-50	-55	-60	-52	-52	-53
heartc	knn	-8	-21	-30	-35	-34	-25
	knn+cnr	-8	-10	-18	-17	-21	-14
	knn+mcs	-30	-30	-26	-30	-23	-27
	knn+psc	-33	-46	-46	-46	-42	-42
hepatitis	knn	4	-9	-28	-11	-16	-12
	knn+cnr	-6	-5	-20	5	5	-4
	knn+mcs	-9	-42	-43	-6	-3	-20
	knn+psc	-11	-28	-46	-20	-16	-24
iris	knn	0	-64	-85	-100	-100	-69
	knn+cnr	-11	-27	-45	-59	-65	-41
	knn+mcs	-10	-50	-55	-36	-43	-38
	knn+psc	-7	-75	-83	-91	-100	-71
labor	knn	11	-5	-13	-20	-16	-8
	knn+cnr	-3	-5	-8	-11	-6	-6
	knn+mcs	11	-7	-13	-17	-16	-8
	knn+psc	11	-19	-20	-27	-16	-14
lymph	knn	8	-10	-29	-10	-8	-9
	knn+cnr	-3	-7	-18	-12	3	-7
	knn+mcs	0	-10	-33	-16	-13	-14
	knn+psc	-6	-22	-37	-30	-13	-21
vote	knn	4	-19	-39	-50	-55	-31
	knn+cnr	0	-8	-14	-23	-34	-15
	knn+mcs	-15	-40	-39	-34	-37	-33
	knn+psc	-16	-59	-66	-65	-63	-53
spectra3	knn	0	-100	-100	-100	-100	-80
	knn+cnr	0	-80	-75	-85	-95	-67
	knn+mcs	0	-64	0	0	-6	-14
	knn+psc	0	-100	-100	-100	-100	-80
spectra5	knn	0	-100	-100	-100	-100	-80
	knn+cnr	0	-100	-100	-100	-100	-80
	knn+mcs	0	-71	-42	-12	0	-25
	knn+psc	0	-100	-100	-100	-100	-80
spectra10	knn	0	-90	-100	-100	-100	-78
	knn+cnr	0	-85	-100	-100	-100	-77
	knn+mcs	0	0	0	0	0	0
	knn+psc	0	-100	-100	-100	-100	-80
spectra20	knn	0	-100	-80	-100	-83	-72
	knn+cnr	-25	-100	-80	-100	-83	-77
	knn+mcs	0	-50	-40	-66	-33	-37
	knn+psc	0	-100	-80	-100	-83	-72
mean		0	0	-8	-47	-49	-86

Figure 4: PRECISION: other - (knn+cliff). Note: *negative* values means CLIFF is performing *better*.