

Data 1: Linear SVM 20news, Default Parameter C=1

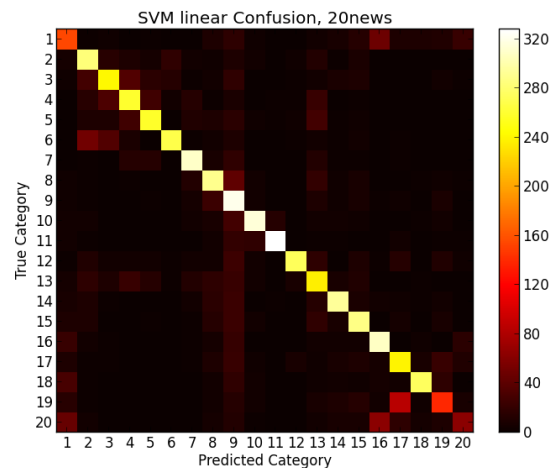
Report File: SVM_linear_20news_report.txt

Classification Report:

	precision	recall	f1-score	support
alt.atheism	0.47	0.48	0.48	319
comp.graphics	0.62	0.73	0.67	389
comp.os.ms-windows.misc	0.66	0.61	0.64	394
comp.sys.ibm.pc.hardware	0.67	0.66	0.66	392
comp.sys.mac.hardware	0.74	0.67	0.70	385
comp.windows.x	0.85	0.68	0.76	395
misc.forsale	0.78	0.79	0.79	390
rec.autos	0.65	0.73	0.69	396
rec.motorcycles	0.46	0.81	0.59	398
rec.sport.baseball	0.82	0.79	0.81	397
rec.sport.hockey	0.93	0.82	0.87	399
sci.crypt	0.90	0.69	0.78	396
sci.electronics	0.55	0.60	0.58	393
sci.med	0.78	0.74	0.76	396
sci.space	0.70	0.73	0.71	394
soc.religion.christian	0.69	0.77	0.73	398
talk.politics.guns	0.61	0.66	0.63	364
talk.politics.mideast	0.88	0.73	0.80	376
talk.politics.misc	0.56	0.45	0.50	310
talk.religion.misc	0.47	0.25	0.33	251
avg / total	0.70	0.68	0.68	7532

Confusion Matrix:

154	2	3	1	2	0	1	9	17	3	1	1	4	7	14	48	9	9	11	23
6	284	15	10	6	18	5	3	9	4	0	3	12	2	8	1	1	0	1	1
3	28	241	35	16	14	2	4	19	1	0	2	5	8	9	0	1	0	4	2
0	15	33	259	26	5	13	2	8	1	2	2	22	1	2	0	0	0	0	1
1	9	10	26	258	1	11	9	16	3	2	3	28	2	3	0	1	1	0	1
0	50	35	8	1	269	2	4	10	1	0	2	5	2	4	0	2	0	0	0
0	2	1	14	14	1	310	7	19	1	1	1	12	2	2	0	2	0	1	0
3	2	1	2	1	1	12	290	42	4	0	0	20	3	7	0	1	2	3	2
3	2	1	0	2	1	6	24	321	5	0	0	9	3	7	2	3	0	8	1
5	4	1	0	0	0	5	7	28	314	13	0	4	4	3	1	1	2	5	0
4	2	1	1	1	1	1	5	20	19	328	1	2	2	1	0	5	1	2	2
2	11	4	5	4	2	4	4	25	4	1	273	17	1	9	2	13	1	11	3
6	17	9	23	13	2	12	17	23	4	1	7	237	7	11	1	0	2	1	0
7	9	2	1	0	0	4	16	24	1	2	0	13	294	8	4	3	2	5	1
9	10	1	0	2	0	2	14	24	4	0	1	19	7	288	0	6	0	7	0
22	4	2	0	0	0	2	6	21	1	0	1	4	4	4	308	0	3	0	16
9	2	2	0	1	0	2	10	23	3	0	7	3	7	9	6	239	7	23	11
30	2	1	1	0	0	0	5	18	4	0	1	3	4	3	6	5	275	17	1
15	2	0	0	0	1	0	5	14	4	1	0	7	10	13	4	85	3	139	7
46	4	0	1	0	0	1	6	12	2	0	0	5	7	7	64	17	6	9	64



Data 2: Linear SVM 20news5 and 20news, Default Parameter C=1

Report File: SVM_linear_20news5_report.txt

Classification Report:

	precision	recall	f1-score	support
computers	0.88	0.88	0.88	1955
recreation	0.77	0.90	0.83	1590
science	0.76	0.75	0.75	1579
politics	0.83	0.74	0.78	1050
religion	0.85	0.74	0.79	968
avg / total	0.82	0.82	0.81	7142

Confusion Matrix:

1722	95	125	6	7
35	1437	71	27	20
159	163	1180	57	20
15	94	95	772	74
27	79	79	71	712

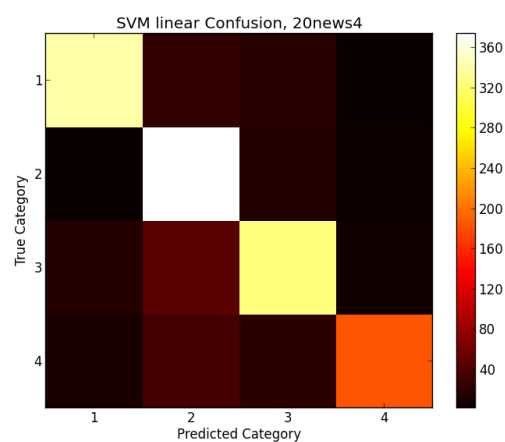
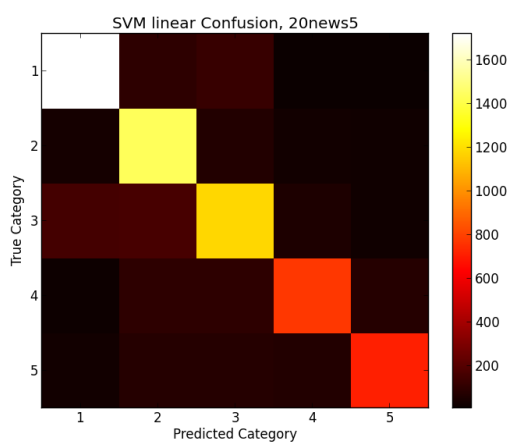
Report File: SVM_linear_20news4_report.txt

Classification Report:

	precision	recall	f1-score	support
comp.graphics	0.92	0.88	0.90	389
talk.religion.misc	0.78	0.94	0.85	396
sci.space	0.85	0.82	0.84	394
rec.autos	0.93	0.74	0.82	251
avg / total	0.87	0.86	0.86	1430

Confusion Matrix:

342	25	19	3
2	374	16	4
17	46	325	6
10	35	21	185



Data 3: Linear SVM, reuters21578-10, Default Parameter C=1

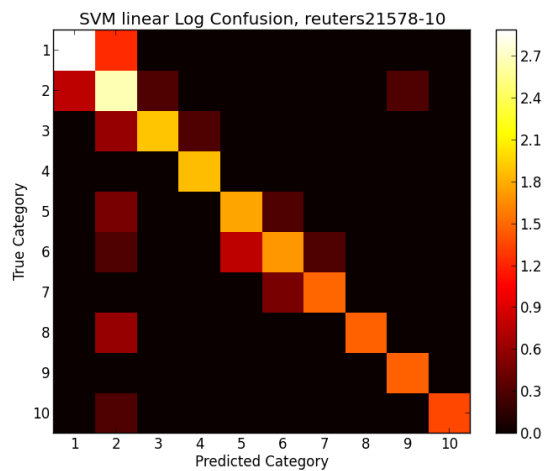
Report File: SVM_linear_reuters21578-10_report.txt

Classification Report:

	precision	recall	f1-score	support
earn	0.99	0.98	0.99	789
acq	0.95	0.99	0.97	472
crude	0.99	0.95	0.97	82
trade	0.99	1.00	0.99	72
money-fx	0.92	0.95	0.94	61
interest	0.94	0.88	0.91	57
money-supply	0.97	0.94	0.95	32
ship	1.00	0.91	0.95	32
sugar	0.97	1.00	0.98	29
coffee	1.00	0.96	0.98	23
avg / total	0.97	0.97	0.97	1649

Confusion Matrix:

773	16	0	0	0	0	0	0	0	0
5	465	1	0	0	0	0	0	1	0
0	3	78	1	0	0	0	0	0	0
0	0	0	72	0	0	0	0	0	0
0	2	0	0	58	1	0	0	0	0
0	1	0	0	5	50	1	0	0	0
0	0	0	0	0	2	30	0	0	0
0	3	0	0	0	0	0	29	0	0
0	0	0	0	0	0	0	0	29	0
0	1	0	0	0	0	0	0	0	22



Data 4: Linear SVM, senate, Default Parameter C=1

Classification Report:

	precision	recall	f1-score	support
liberal	0.99	0.93	0.96	75
conservative	0.94	0.99	0.96	74
avg / total	0.96	0.96	0.96	149

Confusion Matrix:

70	5
1	73

Top conservative Features:

designees
prayer
trial
litigation
babies
standpoint
miguel
zell
marriage
liberal
supermajority
lawsuits
wy
sd
preamble
packers
cattle
dirksen
designee
adjournment

Top liberal Features:

wealthiest
privatization
firefighters
containers
arctic
privatize
hmo
port
giveaways
tanf
cops
halliburton
urgently
vouchers
breaks
executives
parity
mtbe
tsa
responders

Data 5: RBF SVM, senate

Default Parameters: C=1, Gamma=1/D

Report File: SVM_rbf_senate_report.txt

Classification Report:

	precision	recall	f1-score	support
liberal	0.83	0.92	0.87	75
conservative	0.91	0.81	0.86	74
avg / total	0.87	0.87	0.87	149

Confusion Matrix:

69	6
14	60

Grid Search, Optimal Parameters: C=10, Gamma=0.1

Report File: SVM_rbf_senate_grid_search_report.txt

Classification Report:

	precision	recall	f1-score	support
liberal	0.99	0.93	0.96	75
conservative	0.94	0.99	0.96	74
avg / total	0.96	0.96	0.96	149

Confusion Matrix:

70	5
1	73