

Naïve Bayes

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CATEGORIZATION

	books	camera	dvd	health	music	software
books	336	3,4	18,4	17,6	4,6	20
camera	0	372,8	0	19	0	7,2
dvd	14,2	12,8	325,4	12,8	25,6	9,2
health	1	13,2	0	377,4	1	7,4
music	1,6	2,2	7,8	8	374,4	6
software	3,8	8,4	2	10,2	2,2	356,4

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	books	camera	dvd	health	music	software
books	0,063	0,257	6,138	28,612	10,897	12,778
camera	0,054	0,01	0,012	19,862	14,201	16,592
dvd	29,165	106,603	23,704	110,704	15,745	96,514
health	7,173	33,146	0,08	0,964	1,078	21,202
music	7,118	75,056	36,797	72,118	6,137	119,755
software	138,06	62,775	114,221	22,68	86,3	2,103

“A train B test” means training on A and testing on B

SENTIMENT ANALYSIS

Books train books test

result: TP: 155,2 FP: 47,2 TN: 152,8 FN: 44,8Accuracy 0,77

Recall: Pos 0,776, Neg 0,764,

Precision: Pos 0,766798418972332 Neg 0,773279352226721

Books train camera test

result: TP: 136,2 FP: 58,2 TN: 140,8 FN: 63,8Accuracy 0,694235588972431

Recall: Pos 0,681, Neg 0,707537688442211,

Precision: Pos 0,700617283950617 Neg 0,688172043010753

Books train dvd test

result: TP: 138,4 FP: 37 TN: 163 FN: 61,6Accuracy 0,7535

Recall: Pos 0,692, Neg 0,815,

Precision: Pos 0,789053591790194 Neg 0,72573463935886

Books train health test

result: TP: 98,6 FP: 38,2 TN: 161,8 FN: 101,4Accuracy 0,651

Recall: Pos 0,493, Neg 0,809,

Precision: Pos 0,720760233918129 Neg 0,614741641337386

Books train music test

result: TP: 131,4 FP: 35 TN: 165 FN: 68,6Accuracy 0,741

Recall: Pos 0,657, Neg 0,825,

Precision: Pos 0,789663461538462 Neg 0,706335616438356

Books train software test

result: TP: 122,4 FP: 39 TN: 144 FN: 77,6Accuracy 0,69556135770235

Recall: Pos 0,612, Neg 0,786885245901639,

Precision: Pos 0,758364312267658 Neg 0,649819494584838

Camera train books test

result: TP: 136 FP: 61,4 TN: 138,6 FN: 64Accuracy 0,6865

Recall: Pos 0,68, Neg 0,693,

Precision: Pos 0,688956433637285 Neg 0,684106614017769

Camera train camera test

result: TP: 167,2 FP: 32 TN: 167 FN: 32,8Accuracy 0,837593984962406

Recall: Pos 0,836, Neg 0,839195979899497,

Precision: Pos 0,839357429718876 Neg 0,835835835835836

Camera train dvd test

result: TP: 138,6 FP: 60,2 TN: 139,8 FN: 61,4Accuracy 0,696

Recall: Pos 0,693, Neg 0,699,

Precision: Pos 0,697183098591549 Neg 0,694831013916501

Camera train health test

result: TP: 118 FP: 34 TN: 166 FN: 82Accuracy 0,71

Recall: Pos 0,59, Neg 0,83,

Precision: Pos 0,776315789473684 Neg 0,669354838709677

Camera train music test

result: TP: 113,4 FP: 43,6 TN: 156,4 FN: 86,6Accuracy 0,6745

Recall: Pos 0,567, Neg 0,782,

Precision: Pos 0,722292993630573 Neg 0,643621399176955

Camera train software test

result: TP: 131,2 FP: 28,6 TN: 154,4 FN: 68,8Accuracy 0,745691906005222

Recall: Pos 0,656, Neg 0,843715846994536,

Precision: Pos 0,821026282853567 Neg 0,691756272401434

Dvd train books test

result: TP: 115,8 FP: 27,2 TN: 172,8 FN: 84,2Accuracy 0,7215

Recall: Pos 0,579, Neg 0,864,

Precision: Pos 0,80979020979021 Neg 0,672373540856031

Dvd train camera test

result: TP: 62,2 FP: 11,6 TN: 187,4 FN: 137,8Accuracy 0,625563909774436

Recall: Pos 0,311, Neg 0,941708542713568,

Precision: Pos 0,842818428184282 Neg 0,576260762607626

Dvd train dvd test

result: TP: 127,4 FP: 24,6 TN: 175,4 FN: 72,6 Accuracy 0,757

Recall: Pos 0,637, Neg 0,877,

Precision: Pos 0,838157894736842 Neg 0,707258064516129

Dvd train health test

result: TP: 58 FP: 11,6 TN: 188,4 FN: 142 Accuracy 0,616

Recall: Pos 0,29, Neg 0,942,

Precision: Pos 0,8333333333333333 Neg 0,570217917675545

Dvd train music test

result: TP: 170 FP: 69,6 TN: 130,4 FN: 30 Accuracy 0,751

Recall: Pos 0,85, Neg 0,652,

Precision: Pos 0,709515859766277 Neg 0,812967581047382

Dvd train software test

result: TP: 75 FP: 10,6 TN: 172,4 FN: 125 Accuracy 0,645953002610966

Recall: Pos 0,375, Neg 0,94207650273224,

Precision: Pos 0,876168224299065 Neg 0,579690652320108

Health train books test

result: TP: 153 FP: 76,8 TN: 123,2 FN: 47 Accuracy 0,6905

Recall: Pos 0,765, Neg 0,616,

Precision: Pos 0,66579634464752 Neg 0,72385428907168

Health train camera test

result: TP: 121,6 FP: 21 TN: 178 FN: 78,4 Accuracy 0,750877192982456

Recall: Pos 0,608, Neg 0,894472361809045,

Precision: Pos 0,85273492286115 Neg 0,694227769110764

Health train dvd test

result: TP: 142,2 FP: 54,8 TN: 145,2 FN: 57,8 Accuracy 0,7185

Recall: Pos 0,711, Neg 0,726,

Precision: Pos 0,721827411167513 Neg 0,715270935960591

Health train health test

result: TP: 159,2 FP: 32,4 TN: 167,6 FN: 40,8 Accuracy 0,817

Recall: Pos 0,796, Neg 0,838,

Precision: Pos 0,830897703549061 Neg 0,804222648752399

Health train music test

result: TP: 131,8 FP: 56,6 TN: 143,4 FN: 68,2 Accuracy 0,688

Recall: Pos 0,659, Neg 0,717,

Precision: Pos 0,699575371549894 Neg 0,677693761814745

Health train software test

result: TP: 135,4 FP: 21,8 TN: 161,2 FN: 64,6 Accuracy 0,774412532637076

Recall: Pos 0,677, Neg 0,880874316939891,

Precision: Pos 0,861323155216285 Neg 0,713906111603189

Music train books test

result: TP: 137 FP: 36,4 TN: 163,6 FN: 63 Accuracy 0,7515
Recall: Pos 0,685, Neg 0,818,
Precision: Pos 0,790080738177624 Neg 0,721977052074139

Music train camera test

result: TP: 78,2 FP: 19 TN: 180 FN: 121,8 Accuracy 0,647117794486216
Recall: Pos 0,391, Neg 0,904522613065327,
Precision: Pos 0,804526748971193 Neg 0,596421471172962

Music train dvd test

result: TP: 119,8 FP: 19,6 TN: 180,4 FN: 80,2 Accuracy 0,7505
Recall: Pos 0,599, Neg 0,902,
Precision: Pos 0,859397417503587 Neg 0,69224865694551

Music train health test

result: TP: 73,4 FP: 22,8 TN: 177,2 FN: 126,6 Accuracy 0,6265
Recall: Pos 0,367, Neg 0,886,
Precision: Pos 0,762993762993763 Neg 0,583278472679394

Music train music test

result: TP: 145,4 FP: 31,6 TN: 168,4 FN: 54,6 Accuracy 0,7845
Recall: Pos 0,727, Neg 0,842,
Precision: Pos 0,821468926553672 Neg 0,755156950672646

Music train software test

result: TP: 59 FP: 7,6 TN: 175,4 FN: 141 Accuracy 0,61201044386423
Recall: Pos 0,295, Neg 0,958469945355191,
Precision: Pos 0,885885885885886 Neg 0,554361567635904

Software train books test

result: TP: 191,6 FP: 161,6 TN: 38,4 FN: 8,4 Accuracy 0,575
Recall: Pos 0,958, Neg 0,192,
Precision: Pos 0,54246885617214 Neg 0,82051282051282

Software train camera test

result: TP: 188,4 FP: 92,4 TN: 106,6 FN: 11,6 Accuracy 0,739348370927318
Recall: Pos 0,942, Neg 0,535678391959799,
Precision: Pos 0,670940170940171 Neg 0,901861252115059

Software train dvd test

result: TP: 188,8 FP: 144,6 TN: 55,4 FN: 11,2 Accuracy 0,6105
Recall: Pos 0,944, Neg 0,277,
Precision: Pos 0,56628674265147 Neg 0,831831831831832

Software train health test

result: TP: 169,2 FP: 81,2 TN: 118,8 FN: 30,8 Accuracy 0,72
Recall: Pos 0,846, Neg 0,594,
Precision: Pos 0,675718849840256 Neg 0,794117647058824

Software train music test

result: TP: 183,8 FP: 127,6 TN: 72,4 FN: 16,2Accuracy 0,6405

Recall: Pos 0,919, Neg 0,362,

Precision: Pos 0,590237636480411 Neg 0,817155756207675

Software train software test

result: TP: 161 FP: 27,2 TN: 155,8 FN: 39Accuracy 0,827154046997389

Recall: Pos 0,805, Neg 0,851366120218579,

Precision: Pos 0,855472901168969 Neg 0,799794661190965

Perceptron

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Please note that for time saving reasons, we only run 100 iterations of the perceptron this time. Results are better with more iterations.

CATEGORIZATION

	books	camera	dvd	health	music	software
books	356,6	3,8	8	18,2	6	7,4
camera	1	327,2	2,8	51,4	3,4	13,2
dvd	21,8	5,2	295,2	36,4	24,6	16,8
health	5,8	20,6	2	343,2	7,6	20,8
music	19,4	4,4	24,4	37,6	303,4	10,8
software	12,8	11,4	2,6	52	6,4	297,8

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	books	camera	dvd	health	music	software
books	0,231	10,227	7,543	13,551	4,98	13,17
camera	6,065	0,867	5,879	7,895	0,305	6,513
dvd	7,442	25,521	1,082	2,293	14,853	6,835
health	6,154	1,634	0,121	0,911	0,095	1,745
music	0,999	1,398	3,39	2,489	4,411	0,001
software	1,674	1,467	1,445	0,395	0,033	6,5

SENTIMENT ANALYSIS

Books train books test

result: TP: 138,8 FP: 56 TN: 144 FN: 61,2Accuracy 0,707

Recall: Pos 0,694, Neg 0,72,

Precision: Pos 0,712525667351129 Neg 0,701754385964912

Books train camera test

result: TP: 110,4 FP: 51,6 TN: 147,4 FN: 89,6Accuracy 0,646115288220551

Recall: Pos 0,552, Neg 0,74070351758794,
Precision: Pos 0,681481481481481 Neg 0,621940928270042

Books train dvd test

result: TP: 120,8 FP: 48,2 TN: 151,8 FN: 79,2Accuracy 0,6815
Recall: Pos 0,604, Neg 0,759,
Precision: Pos 0,714792899408284 Neg 0,657142857142857

Books train health test

result: TP: 108,8 FP: 47,8 TN: 152,2 FN: 91,2Accuracy 0,6525
Recall: Pos 0,544, Neg 0,761,
Precision: Pos 0,694763729246488 Neg 0,625308134757601

Books train music test

result: TP: 121,4 FP: 53 TN: 147 FN: 78,6Accuracy 0,671
Recall: Pos 0,607, Neg 0,735,
Precision: Pos 0,696100917431193 Neg 0,651595744680851

Books train software test

result: TP: 109,8 FP: 47,6 TN: 135,4 FN: 90,2Accuracy 0,640208877284595
Recall: Pos 0,549, Neg 0,739890710382514,
Precision: Pos 0,697585768742058 Neg 0,600177304964539

Camera train books test

result: TP: 140,8 FP: 89,2 TN: 110,8 FN: 59,2Accuracy 0,629
Recall: Pos 0,704, Neg 0,554,
Precision: Pos 0,612173913043478 Neg 0,651764705882353

Camera train camera test

result: TP: 148,8 FP: 42,2 TN: 156,8 FN: 51,2Accuracy 0,765914786967419
Recall: Pos 0,744, Neg 0,787939698492462,
Precision: Pos 0,779057591623037 Neg 0,753846153846154

Camera train dvd test

result: TP: 145,6 FP: 82,8 TN: 117,2 FN: 54,4Accuracy 0,657
Recall: Pos 0,728, Neg 0,586,
Precision: Pos 0,637478108581436 Neg 0,682983682983683

Camera train health test

result: TP: 125,4 FP: 44 TN: 156 FN: 74,6Accuracy 0,7035
Recall: Pos 0,627, Neg 0,78,
Precision: Pos 0,74025974025974 Neg 0,676496097137901

Camera train music test

result: TP: 125,2 FP: 68,2 TN: 131,8 FN: 74,8Accuracy 0,6425
Recall: Pos 0,626, Neg 0,659,
Precision: Pos 0,647362978283351 Neg 0,637947725072604

Camera train software test

result: TP: 136 FP: 38,2 TN: 144,8 FN: 64Accuracy 0,733159268929504

Recall: Pos 0,68, Neg 0,791256830601093,
Precision: Pos 0,780711825487945 Neg 0,693486590038314

Dvd train books test

result: TP: 115,2 FP: 52,8 TN: 147,2 FN: 84,8Accuracy 0,656
Recall: Pos 0,576, Neg 0,736,
Precision: Pos 0,685714285714286 Neg 0,63448275862069

Dvd train camera test

result: TP: 96,6 FP: 42,4 TN: 156,6 FN: 103,4Accuracy 0,634586466165413
Recall: Pos 0,483, Neg 0,786934673366834,
Precision: Pos 0,694964028776978 Neg 0,602307692307692

Dvd train dvd test

result: TP: 132 FP: 56,4 TN: 143,6 FN: 68Accuracy 0,689
Recall: Pos 0,66, Neg 0,718,
Precision: Pos 0,700636942675159 Neg 0,678638941398866

Dvd train health test

result: TP: 110 FP: 70,8 TN: 129,2 FN: 90Accuracy 0,598
Recall: Pos 0,55, Neg 0,646,
Precision: Pos 0,608407079646018 Neg 0,589416058394161

Dvd train music test

result: TP: 152,8 FP: 92,8 TN: 107,2 FN: 47,2Accuracy 0,65
Recall: Pos 0,764, Neg 0,536,
Precision: Pos 0,62214983713355 Neg 0,694300518134715

Dvd train software test

result: TP: 114,2 FP: 54,8 TN: 128,2 FN: 85,8Accuracy 0,63289817232376
Recall: Pos 0,571, Neg 0,700546448087432,
Precision: Pos 0,675739644970414 Neg 0,599065420560748

Health train books test

result: TP: 141 FP: 89,2 TN: 110,8 FN: 59Accuracy 0,6295
Recall: Pos 0,705, Neg 0,554,
Precision: Pos 0,612510860121633 Neg 0,652532391048292

Health train camera test

result: TP: 141,8 FP: 45,2 TN: 153,8 FN: 58,2Accuracy 0,740852130325815
Recall: Pos 0,709, Neg 0,77286432160804,
Precision: Pos 0,758288770053476 Neg 0,725471698113208

Health train dvd test

result: TP: 125 FP: 70,8 TN: 129,2 FN: 75Accuracy 0,6355
Recall: Pos 0,625, Neg 0,646,
Precision: Pos 0,638406537282942 Neg 0,632713026444662

Health train health test

result: TP: 146,8 FP: 43,8 TN: 156,2 FN: 53,2Accuracy 0,7575

Recall: Pos 0,734, Neg 0,781,
Precision: Pos 0,770199370409234 Neg 0,745940783190067

Health train music test

result: TP: 122,4 FP: 73,8 TN: 126,2 FN: 77,6Accuracy 0,6215
Recall: Pos 0,612, Neg 0,631,
Precision: Pos 0,623853211009174 Neg 0,619234543670265

Health train software test

result: TP: 140,2 FP: 46,2 TN: 136,8 FN: 59,8Accuracy 0,723237597911227
Recall: Pos 0,701, Neg 0,747540983606557,
Precision: Pos 0,752145922746781 Neg 0,695829094608342

Music train books test

result: TP: 142,8 FP: 68,4 TN: 131,6 FN: 57,2Accuracy 0,686
Recall: Pos 0,714, Neg 0,658,
Precision: Pos 0,676136363636364 Neg 0,697033898305085

Music train camera test

result: TP: 138,8 FP: 75 TN: 124 FN: 61,2Accuracy 0,658646616541353
Recall: Pos 0,694, Neg 0,623115577889447,
Precision: Pos 0,649204864359214 Neg 0,669546436285097

Music train dvd test

result: TP: 151 FP: 69 TN: 131 FN: 49Accuracy 0,705
Recall: Pos 0,755, Neg 0,655,
Precision: Pos 0,686363636363636 Neg 0,727777777777778

Music train health test

result: TP: 138,4 FP: 80,4 TN: 119,6 FN: 61,6Accuracy 0,645
Recall: Pos 0,692, Neg 0,598,
Precision: Pos 0,63254113345521 Neg 0,660044150110375

Music train music test

result: TP: 153,4 FP: 69,2 TN: 130,8 FN: 46,6Accuracy 0,7105
Recall: Pos 0,767, Neg 0,654,
Precision: Pos 0,689128481581312 Neg 0,737316798196167

Music train software test

result: TP: 132 FP: 67,6 TN: 115,4 FN: 68Accuracy 0,645953002610966
Recall: Pos 0,66, Neg 0,630601092896175,
Precision: Pos 0,661322645290581 Neg 0,629225736095965

Software train books test

result: TP: 126 FP: 90,6 TN: 109,4 FN: 74Accuracy 0,5885
Recall: Pos 0,63, Neg 0,547,
Precision: Pos 0,581717451523546 Neg 0,596510359869138

Software train camera test

result: TP: 152,2 FP: 60,4 TN: 138,6 FN: 47,8Accuracy 0,728822055137845

Recall: Pos 0,761, Neg 0,696482412060301,
Precision: Pos 0,715898400752587 Neg 0,743562231759657

Software train dvd test

result: TP: 116,8 FP: 68,4 TN: 131,6 FN: 83,2Accuracy 0,621

Recall: Pos 0,584, Neg 0,658,

Precision: Pos 0,630669546436285 Neg 0,612662942271881

Software train health test

result: TP: 138 FP: 69,2 TN: 130,8 FN: 62Accuracy 0,672

Recall: Pos 0,69, Neg 0,654,

Precision: Pos 0,666023166023166 Neg 0,678423236514523

Software train music test

result: TP: 125,6 FP: 72,2 TN: 127,8 FN: 74,4Accuracy 0,6335

Recall: Pos 0,628, Neg 0,639,

Precision: Pos 0,634984833164813 Neg 0,632047477744807

Software train software test

result: TP: 142 FP: 33,6 TN: 149,4 FN: 58Accuracy 0,760835509138381

Recall: Pos 0,71, Neg 0,816393442622951,

Precision: Pos 0,808656036446469 Neg 0,720347155255545