Appendix：追加資料（リスク推定モデルの補足情報）

本補足資料では、本文で言及した 14 種類のリスク推定モデルの構築に関する補足的情報を提供する。各セクションの構成は以下の通りである。

【Appendix 1】説明変数の分布：
本研究で使用したデータにおける 25 種類の説明変数の分布状況を示す。データの偏りや特性を可視化し、モデルの構築背景を補足する。

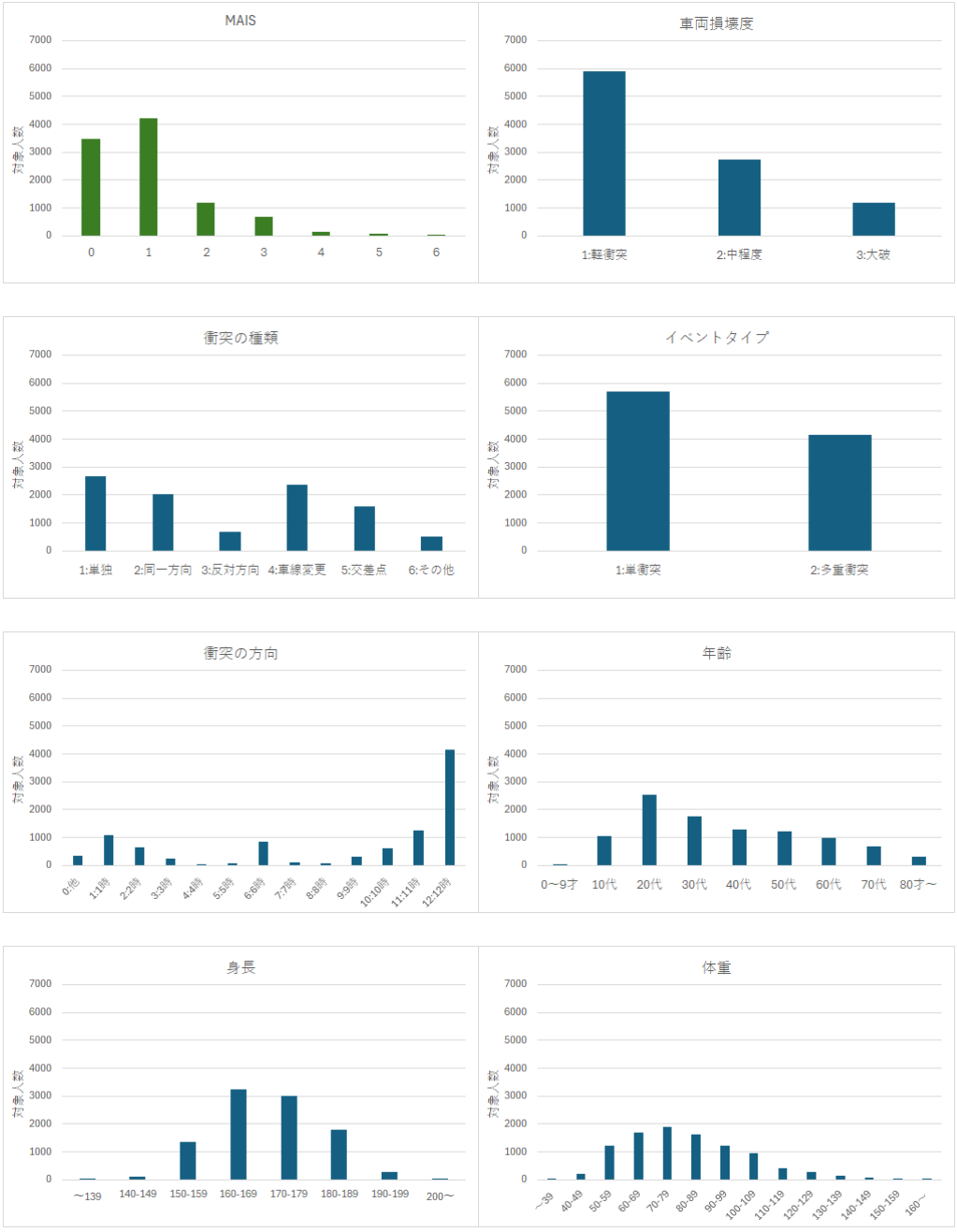
【Appendix 2】MAIS に対する回帰モデルの評価：
MAIS に対して 25 種類の説明変数を用いて構築した単変量回帰モデルの R^2値を示す。個々の説明変数がどの程度、負傷リスクに寄与しているかを視覚的に確認できる。

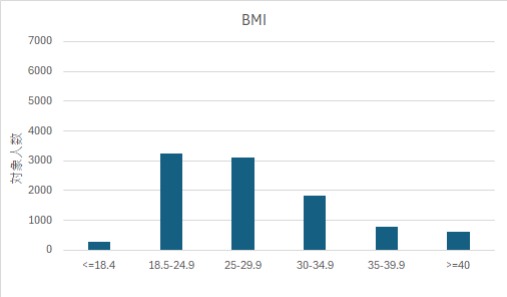
【Appendix 3】14 種リスクモデルの出力結果：
MAIS 以外に構築した 13 種のリスクモデルの推定結果を示す。各モデルの傾向や、実測値との整合性を図や数値で確認できる。

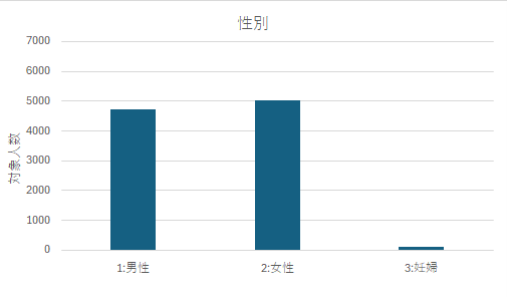
本資料は、本文 2 章におけるデータの偏り、3 章・4 章における回帰モデル、5 章における評価に対応する技術的補足として位置づけられる。

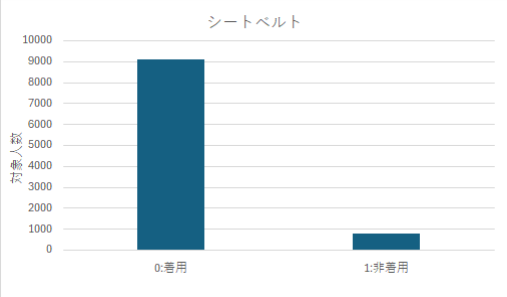
Appendix 1　：　説明変数の分布

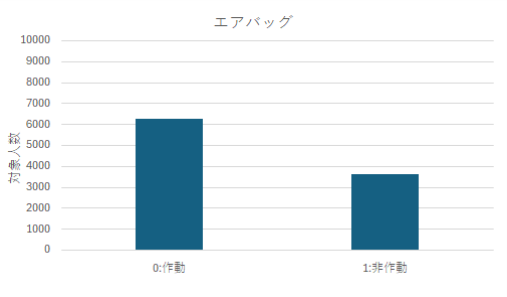
各説明変数の分布を可視化し、モデル構築におけるデータの特性と偏りを補足する。

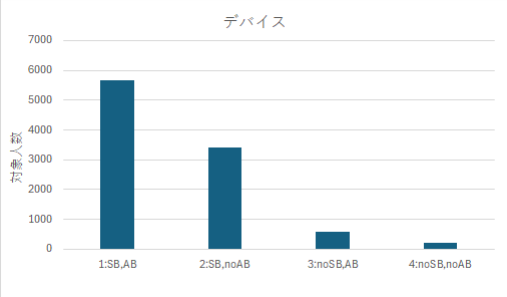


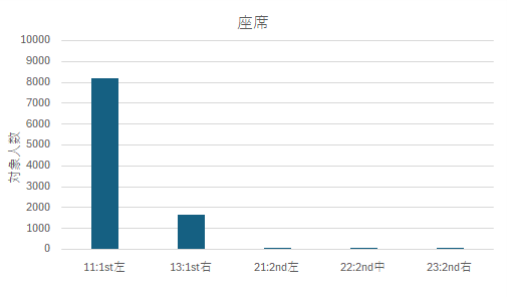

BMI
対象人数
7000
6000
5000
4000
3000
2000
1000
0
<=18.4
18.5-24.9
25-29.9
30-34.9
35-39.9
>=40

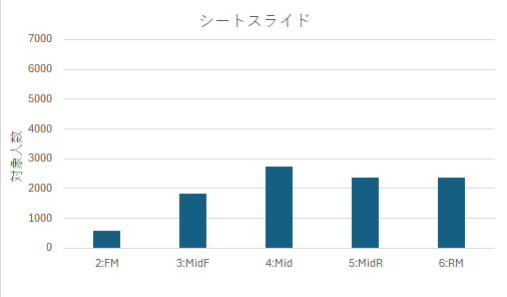

性別
対象人数
7000
6000
5000
4000
3000
2000
1000
0
1:男性
2:女性
3:妊婦

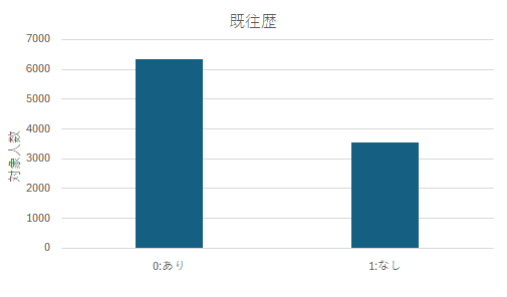

シートベルト
対象人数
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
0:着用
1:非着用

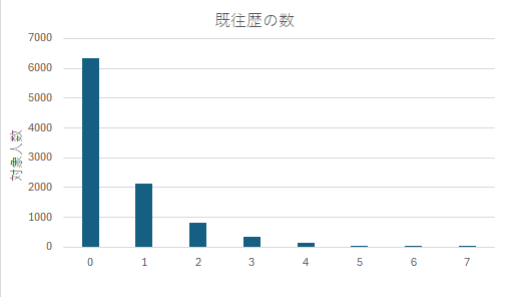

エアバッグ
対象人数
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
0:作動
1:非作動

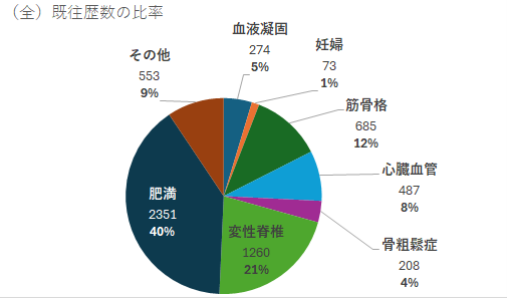

デバイス
対象人数
7000
6000
5000
4000
3000
2000
1000
0
1:SB,AB
2:SB,noAB
3:noSB,AB
4:noSB,noAB


座席
対象人数
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
11:1st左
13:1st右
21:2nd左
22:2nd中
23:2nd右


シートスライド
対象人数
7000
6000
5000
4000
3000
2000
1000
0
2:FM
3:MidF
4:Mid
5:MidR
6:RM

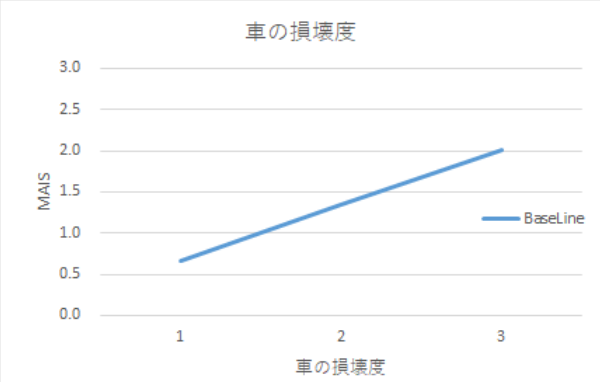

既往歴
対象人数
7000
6000
5000
4000
3000
2000
1000
0
0:あり
1:なし


既往歴の数
対象人数
7000
6000
5000
4000
3000
2000
1000
0
0
1
2
3
4
5
6
7

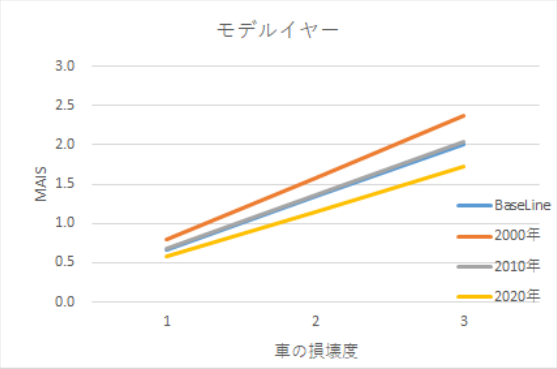

(全) 既往歴数の比率
血液凝固
274
5%
妊婦
73
1%
その他
553
9%
筋骨格
685
12%
心臓血管
487
8%
肥満
2351
40%
変性脊椎
1260
21%
骨粗鬆症
208
4%

Appendix 2 ： 回帰分析（MAIS の場合）

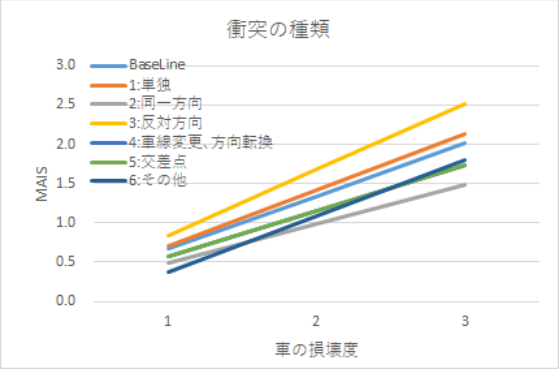
各説明変数での MAIS に対する説明力（R^2）を算出し、相関性を評価した。



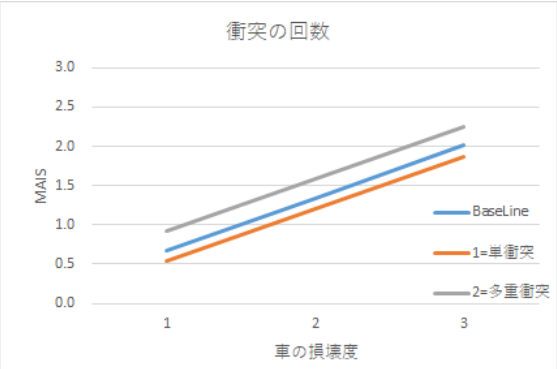
R2＝0.193



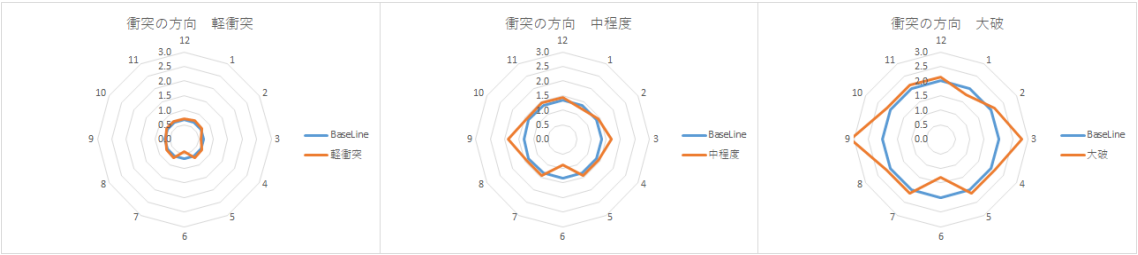
R2＝0.200



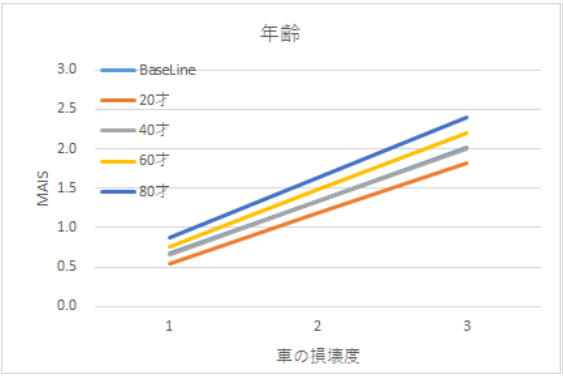
R2＝0.218



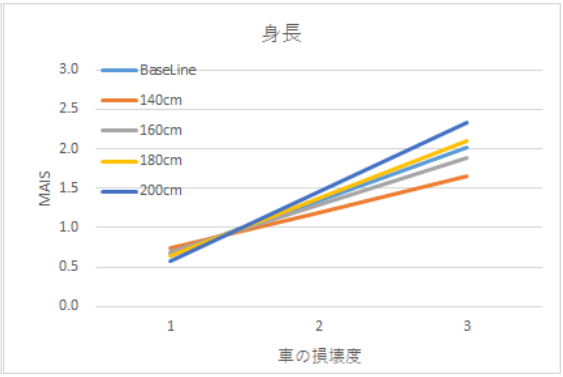
R2＝0.210



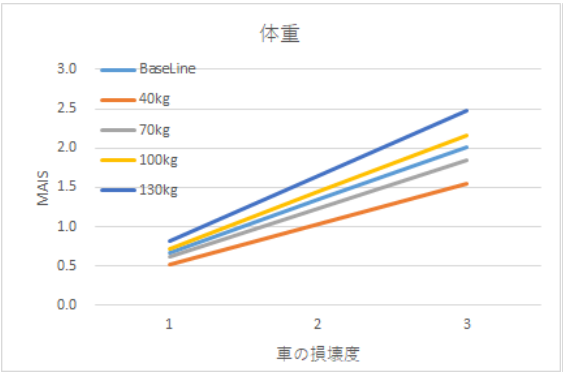
R2＝0.216



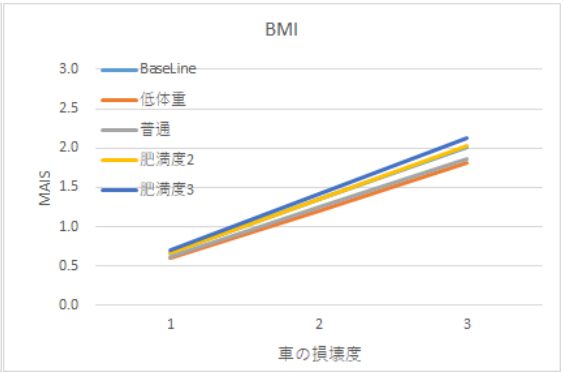
R2＝207



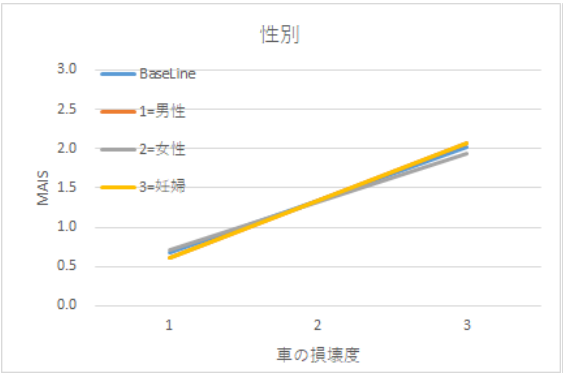
R2＝0.196



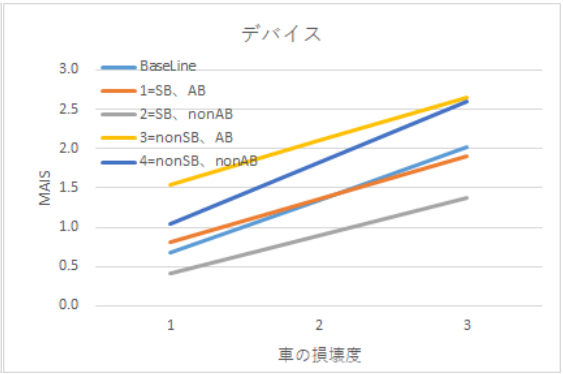
R2＝204



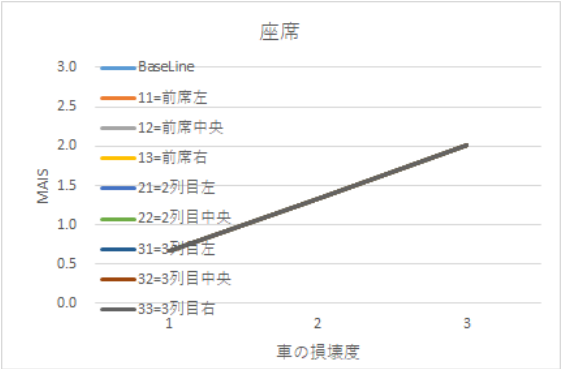
R2＝0.203



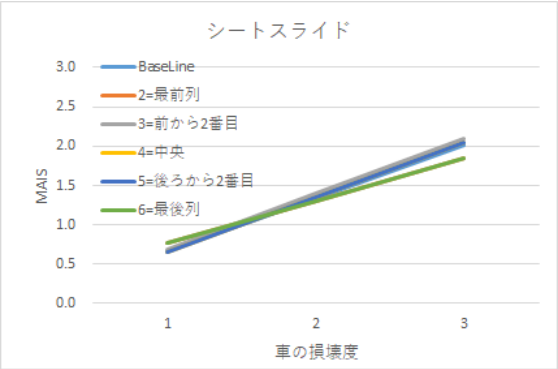
R2＝0.195



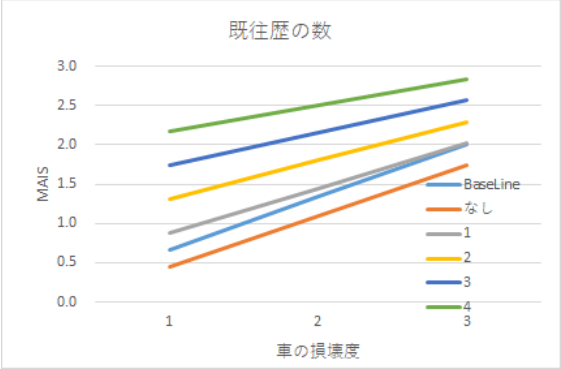
R2＝0.195



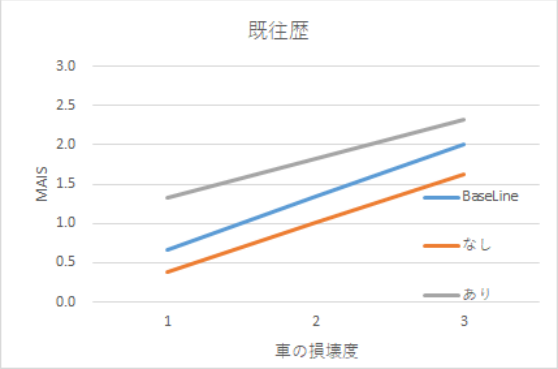
R2＝0.194



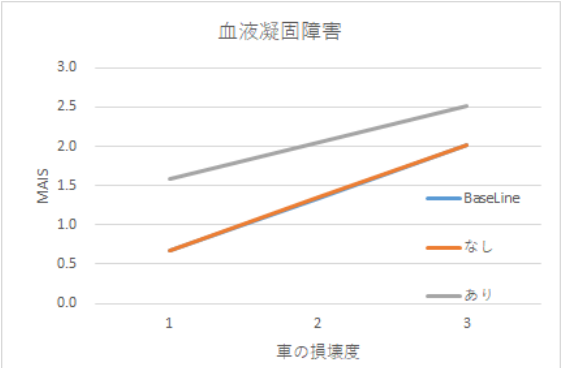
R2＝0.195



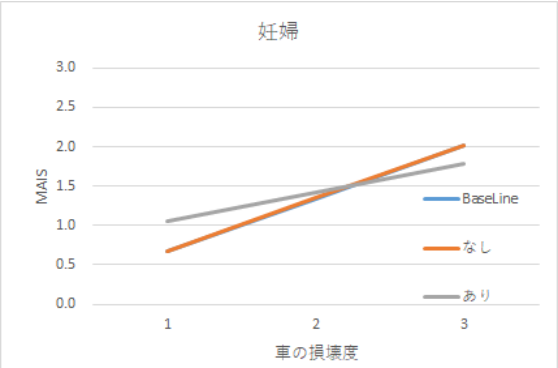
R2＝0.320



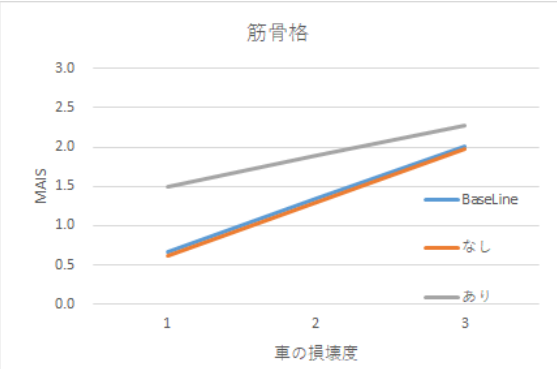
R2＝0.339



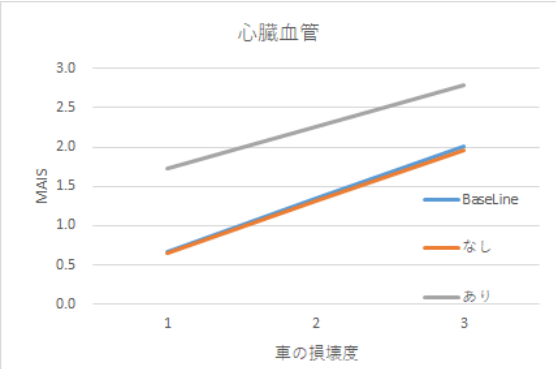
R2＝0.208



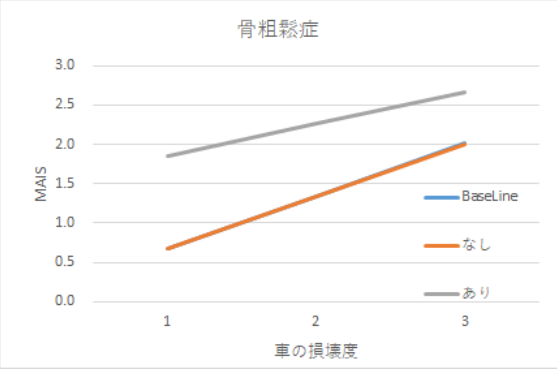
R2＝0.194



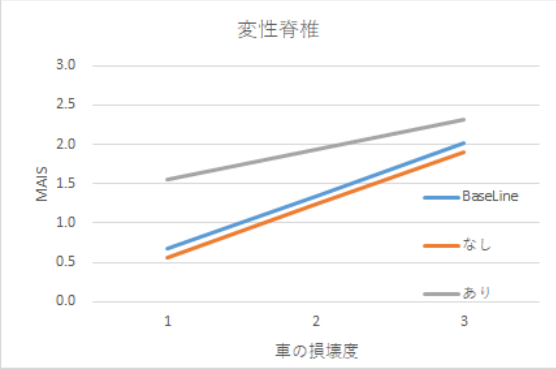
R2＝0.223



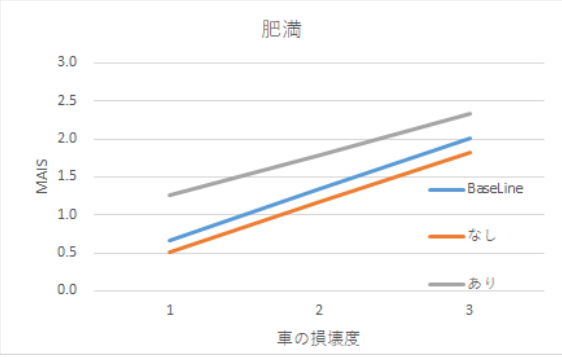
R2＝0.283



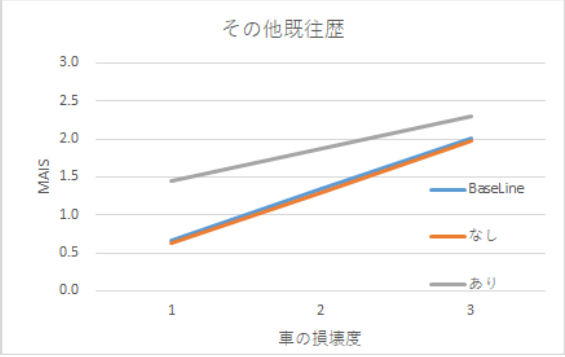
R2＝0.212



R2＝0.256



R2＝0.263



R2＝0.215

Appendix 3 ： 各モデルの評価結果

リスクモデルの予測出力を示し、モデル構築の一貫性と網羅性を補足する。

MAIS

		予測							
		0	1	2	3	4	5	6	計
実測	0	2790	644	43	5	0	0	0	3482
	1	207	3094	880	36	1	0	0	4218
	2	6	204	910	56	2	0	0	1178
	3	1	23	173	496	3	1	0	697
	4	0	2	14	51	95	0	0	162
	5	0	1	9	9	54	23	0	96
	6	0	0	2	4	1	26	3	36
	計	3004	3968	2031	657	156	50	3	9869

recall		予測						
		0	1	2	3	4	5	6
実測	0	80%	18%	1%	0%	0%	0%	0%
	1	5%	73%	21%	1%	0%	0%	0%
	2	1%	17%	77%	5%	0%	0%	0%
	3	0%	3%	25%	71%	0%	0%	0%
	4	0%	1%	9%	31%	59%	0%	0%
	5	0%	1%	9%	9%	56%	24%	0%
	6	0%	0%	6%	11%	3%	72%	8%

小さく予測	正しく予測	大きく予測	error
	80%	18%	1%
5%	73%	21%	1%
17%	77%	5%	1%
25%	71%	0%	4%
31%	59%	0%	10%
56%	24%	0%	20%
72%	8%	0%	19%
7%	75%	16%	2%

precision		予測						
		0	1	2	3	4	5	6
実測	0	93%	16%	2%	1%	0%	0%	0%
	1	7%	78%	43%	5%	1%	0%	0%
	2	0%	5%	45%	9%	1%	0%	0%
	3	0%	1%	9%	75%	2%	2%	0%
	4	0%	0%	1%	8%	61%	0%	0%
	5	0%	0%	0%	1%	35%	46%	0%
	6	0%	0%	0%	1%	1%	52%	100%

実は小さい		16%	43%	9%	2%	0%	0%	16%
正しい	93%	78%	45%	75%	61%	46%	100%	75%
実は大きい	7%	5%	9%	8%	35%	52%		7%
error	0%	1%	3%	8%	3%	2%	0%	2%

MAIS	precision	recall	f1-score	support	予測平均
0	0.93	0.80	0.86	3482	0.21
1	0.78	0.73	0.76	4218	1.18
2	0.45	0.77	0.57	1178	1.87
3	0.75	0.71	0.73	697	2.69
4	0.61	0.59	0.60	162	3.48
5	0.46	0.24	0.32	96	3.93
6	1.00	0.08	0.15	36	4.67
計				9869	
accuracy	0.75				

ISS

		予測								
		0	1〜2	3〜5	6〜14	15〜24	25〜34	35〜74	75	計
実測	0	1239	1527	468	246	16	2	1	0	3499
	1〜2	252	1548	1237	876	69	6	3	0	3991
	3〜5	11	127	463	395	33	3	0	0	1032
	6〜14	3	22	84	642	62	2	1	0	816
	15〜24	2	3	8	71	221	2	0	0	307
	25〜34	0	0	3	14	59	45	0	0	121
	35〜74	0	0	0	15	8	28	33	0	84
	75	0	0	1	1	8	0	26	0	36
	計	1507	3227	2264	2260	476	88	64	0	9886

recall		予測							
		0	1〜2	3〜5	6〜14	15〜24	25〜34	35〜74	75
実測	0	35%	44%	13%	7%	0%	0%	0%	0%
	1〜2	6%	39%	31%	22%	2%	0%	0%	0%
	3〜5	1%	12%	45%	38%	3%	0%	0%	0%
	6〜14	0%	3%	10%	79%	8%	0%	0%	0%
	15〜24	1%	1%	3%	23%	72%	1%	0%	0%
	25〜34	0%	0%	2%	12%	49%	37%	0%	0%
	35〜74	0%	0%	0%	18%	10%	33%	39%	0%
	75	0%	0%	3%	3%	22%	0%	72%	0%

(−)		(+)		
小さく予測	正しく予測	大きく予測	±	error
	35%	44%	79%	21%
6%	39%	31%	76%	24%
12%	45%	38%	95%	5%
10%	79%	8%	97%	3%
23%	72%	1%	96%	4%
49%	37%	0%	86%	14%
33%	39%	0%	73%	27%
72%	0%		72%	28%
7%	42%	33%	82%	18%

precision		予測								
		0	1〜2	3〜5	6〜14	15〜24	25〜34	35〜74	75	
実測	0	82%	47%	21%	11%	3%	2%	2%		
	1〜2	17%	48%	55%	39%	14%	7%	5%		
	3〜5	1%	4%	20%	17%	7%	3%	0%		
	6〜14	0%	1%	4%	28%	13%	2%	2%		
	15〜24	0%	0%	0%	3%	46%	2%	0%		
	25〜34	0%	0%	0%	1%	12%	51%	0%		
	35〜74	0%	0%	0%	1%	2%	32%	52%		
	75	0%	0%	0%	0%	2%	0%	41%		
(−)	実は小さい		47%	55%	17%	13%	2%	0%	0%	33%
	正しい	82%	48%	20%	28%	46%	51%	52%	0%	42%
(+)	実は大きい	17%	4%	4%	3%	12%	32%	41%		7%
	±	99%	99%	79%	49%	72%	85%	92%	0%	82%
	error	1%	1%	21%	51%	28%	15%	8%	100%	18%

ISS	(precision)	(recall)	f1-score	support	予測平均
0	0.99	0.79	0.88	3499	1.8
1〜2	0.99	0.76	0.86	3991	4.0
3〜5	0.79	0.95	0.86	1032	5.9
6〜14	0.49	0.97	0.65	816	9.6
15〜24	0.72	0.96	0.82	307	15.8
25〜34	0.85	0.86	0.86	121	22.5
35〜74	0.92	0.73	0.81	84	29.0
75	0.00	0.72	0.00	36	49.7
計				9886	
accuracy	0.82				

Number of AIS

	予測												
	0	1	2	3	4	5	6	7	8	9	10	>=11	計
0	1115	1147	558	288	116	78	71	31	23	12	7	11	3457
1	55	271	379	269	161	136	62	44	29	13	23	27	1469
2	20	108	264	249	181	111	81	53	49	18	12	26	1172
3	2	34	137	197	160	117	85	64	26	22	15	22	881
4	2	11	45	112	133	116	77	55	27	12	15	32	637
5	3	4	15	51	94	98	74	49	17	19	13	25	462
6	0	3	6	15	37	83	62	47	42	18	12	13	338
7	2	2	4	10	16	32	40	53	33	16	11	17	236
8	0	0	1	2	7	11	36	50	41	20	17	15	200
9	0	0	1	8	1	5	10	21	38	26	27	11	148
10	0	0	0	1	2	2	8	5	18	35	30	15	116
>=11	1	2	3	3	8	8	12	21	24	36	68	587	773
計	1200	1582	1413	1205	916	797	618	493	367	247	250	801	9889

		予測					
		0	1〜2	3〜5	6〜10	>=11	計
実測	0	1115	1705	482	144	11	3457
	1〜2	75	1022	1022	384	53	2556
	3〜5	7	246	1078	570	79	1980
	6〜10	2	17	232	716	71	1038
	>=11	1	5	19	161	587	773
	計	1200	2995	2833	1975	801	9804

recall		予測				
		0	1〜2	3〜5	6〜10	>=11
実測	0	32%	49%	14%	4%	0%
	1〜2	3%	40%	40%	15%	2%
	3〜5	0%	12%	54%	29%	4%
	6〜10	0%	2%	22%	69%	7%
	>=11	0%	1%	2%	21%	76%

(−)		(+)		
小さく予測	正しく予測	大きく予測	±	error
	32%	49%	82%	18%
3%	40%	40%	83%	17%
12%	54%	29%	96%	4%
22%	69%	7%	98%	2%
21%	76%		97%	3%
7%	46%	34%	88%	12%

precision		予測				
		0	1〜2	3〜5	6〜10	>=11
実測	0	93%	57%	17%	7%	1%
	1〜2	6%	34%	36%	19%	7%
	3〜5	1%	8%	38%	29%	10%
	6〜10	0%	1%	8%	36%	9%
	>=11	0%	0%	1%	8%	73%

(−)	実は小さい		57%	36%	29%	9%	34%
	正しい	93%	34%	38%	36%	73%	46%
(+)	実は大きい	6%	8%	8%	8%		7%
	±	99%	99%	82%	73%	82%	88%
	error	1%	1%	18%	27%	18%	12%

Number_of_AIS	(precision)	(recall)	f1-score	support	予測平均
0	0.99	0.82	0.90	3457	1.5
1〜2	0.99	0.83	0.90	2556	3.5
3〜5	0.82	0.96	0.88	1980	4.9
6〜10	0.73	0.98	0.84	1038	7.2
>=11	0.82	0.97	0.89	773	14.6
計				9804	
accuracy	0.88				

AIS_Head

		予測							
		0	1	2	3	4	5	6	計
実測	0	6202	1839	159	8	1	1	0	8210
	1	72	629	30	1	1	0	0	733
	2	35	152	258	4	1	0	0	450
	3	7	13	29	64	0	0	0	113
	4	1	2	2	48	9	0	0	62
	5	1	1	0	0	34	1	0	37
	6	0	0	1	0	0	17	4	22
	計	6318	2636	479	125	46	19	4	9627

recall		予測						
		0	1	2	3	4	5	6
実測	0	76%	22%	2%	0%	0%	0%	0%
	1	10%	86%	4%	0%	0%	0%	0%
	2	8%	34%	57%	1%	0%	0%	0%
	3	6%	12%	26%	57%	0%	0%	0%
	4	2%	3%	3%	77%	15%	0%	0%
	5	3%	3%	0%	0%	92%	3%	0%
	6	0%	0%	5%	0%	0%	77%	18%

小さく予測	正しく予測	大きく予測	error
	76%	22%	2%
10%	86%	4%	0%
34%	57%	1%	8%
26%	57%	0%	18%
77%	15%	0%	8%
92%	3%	0%	5%
77%	18%	0%	5%
4%	74%	19%	2%

precision		予測						
		0	1	2	3	4	5	6
実測	0	98%	70%	33%	6%	2%	5%	0%
	1	1%	24%	6%	1%	2%	0%	0%
	2	1%	6%	54%	3%	2%	0%	0%
	3	0%	0%	6%	51%	0%	0%	0%
	4	0%	0%	0%	38%	20%	0%	0%
	5	0%	0%	0%	0%	74%	5%	0%
	6	0%	0%	0%	0%	0%	89%	100%

実は小さい		70%	6%	3%	0%	0%	0%	19%
正しい	98%	24%	54%	51%	20%	5%	100%	74%
実は大きい	1%	6%	6%	38%	74%	89%		4%
error	1%	1%	34%	7%	7%	5%	0%	2%

AIS_Head	precision	recall	f1-score	support	予測平均
0	0.98	0.76	0.85	8210	0.27
1	0.24	0.86	0.37	733	0.95
2	0.54	0.57	0.56	450	1.51
3	0.51	0.57	0.54	113	2.33
4	0.20	0.15	0.17	62	3.00
5	0.05	0.03	0.04	37	3.84
6	1.00	0.18	0.31	22	5.05
計				9627	
accuracy	0.74				

AIS_Face

		予測							
		0	1	2	3	4	5	6	計
実測	0	7541	505	3	0	0	0	0	8049
	1	216	1445	1	0	0	0	0	1662
	2	13	29	131	0	0	0	0	173
	3	0	1	2	1	0	0	0	4
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	計	7770	1980	137	1	0	0	0	9888

recall		予測						
		0	1	2	3	4	5	6
実測	0	94%	6%	0%	0%	0%	0%	0%
	1	13%	87%	0%	0%	0%	0%	0%
	2	8%	17%	76%	0%	0%	0%	0%
	3	0%	25%	50%	25%	0%	0%	0%
	4							
	5							
	6							

小さく予測	正しく予測	大きく予測	error
	94%	6%	0%
13%	87%	0%	0%
17%	76%	0%	8%
50%	25%	0%	25%
0%	0%	0%	100%
0%	0%	0%	100%
0%	0%	0%	100%
2%	92%	5%	0%

precision		予測						
		0	1	2	3	4	5	6
実測	0	97%	26%	2%	0%			
	1	3%	73%	1%	0%			
	2	0%	1%	96%	0%			
	3	0%	0%	1%	100%			
	4	0%	0%	0%	0%			
	5	0%	0%	0%	0%			
	6	0%	0%	0%	0%			

実は小さい		26%	1%	0%		5%
正しい	97%	73%	96%	100%		92%
実は大きい	3%	1%	1%	0%		2%
error	0%	0%	2%	0%		0%

AIS_Face	precision	recall	f1-score	support	予測平均
0	0.97	0.94	0.95	8049	0.06
1	0.73	0.87	0.79	1662	0.87
2	0.96	0.76	0.85	173	1.68
3	1.00	0.25	0.40	4	2.00
4	0.00	0.00		0	
5	0.00	0.00		0	
6	0.00	0.00		0	
計				9888	
accuracy	0.92				

AIS_Neck

		予測							
		0	1	2	3	4	5	6	計
実測	0	9042	391	25	1	0	0	0	9459
	1	88	297	1	0	0	0	0	386
	2	1	1	12	0	0	0	0	14
	3	2	1	12	4	0	0	0	19
	4	0	0	0	1	0	0	0	1
	5	0	0	0	0	1	0	0	1
	6	0	0	0	0	0	0	0	0
	計	9133	690	50	6	1	0	0	9880

recall		予測						
		0	1	2	3	4	5	6
実測	0	96%	4%	0%	0%	0%	0%	0%
	1	23%	77%	0%	0%	0%	0%	0%
	2	7%	7%	86%	0%	0%	0%	0%
	3	11%	5%	63%	21%	0%	0%	0%
	4	0%	0%	0%	100%	0%	0%	0%
	5	0%	0%	0%	0%	100%	0%	0%
	6							

小さく予測	正しく予測	大きく予測	error
	96%	4%	0%
23%	77%	0%	0%
7%	86%	0%	7%
63%	21%	0%	16%
100%	0%	0%	0%
100%	0%	0%	0%
0%	0%	0%	100%
1%	95%	4%	0%

precision		予測						
		0	1	2	3	4	5	6
実測	0	99%	57%	50%	17%	0%		
	1	1%	43%	2%	0%	0%		
	2	0%	0%	24%	0%	0%		
	3	0%	0%	24%	67%	0%		
	4	0%	0%	0%	17%	0%		
	5	0%	0%	0%	0%	100%		
	6	0%	0%	0%	0%	0%		

実は小さい		57%	2%	0%	0%		4%
正しい	99%	43%	24%	67%	0%		95%
実は大きい	1%	0%	24%	17%	100%		1%
error	0%	0%	50%	17%	0%		0%

AIS_Neck	precision	recall	f1-score	support	予測平均
0	0.99	0.96	0.97	9459	0.05
1	0.43	0.77	0.55	386	0.77
2	0.24	0.86	0.38	14	1.79
3	0.67	0.21	0.32	19	1.95
4	0.00	0.00		1	3.00
5	0.00	0.00		1	4.00
6	0.00	0.00		0	
計				9880	
accuracy	0.95				

AIS_Thorax

		予測							
		0	1	2	3	4	5	6	計
実測	0	5461	1827	120	8	0	0	0	7416
	1	146	1372	73	1	0	0	0	1592
	2	6	55	251	2	0	0	0	314
	3	4	48	185	194	0	0	0	431
	4	0	5	7	32	15	0	0	59
	5	0	2	1	0	33	3	0	39
	6	0	0	0	0	0	11	0	11
	計	5617	3309	637	237	48	14	0	9862

recall		予測						
		0	1	2	3	4	5	6
実測	0	74%	25%	2%	0%	0%	0%	0%
	1	9%	86%	5%	0%	0%	0%	0%
	2	2%	18%	80%	1%	0%	0%	0%
	3	1%	11%	43%	45%	0%	0%	0%
	4	0%	8%	12%	54%	25%	0%	0%
	5	0%	5%	3%	0%	85%	8%	0%
	6	0%	0%	0%	0%	0%	100%	0%

小さく予測	正しく予測	大きく予測	error
	74%	25%	2%
9%	86%	5%	0%
18%	80%	1%	2%
43%	45%	0%	12%
54%	25%	0%	20%
85%	8%	0%	8%
100%	0%	0%	0%
5%	74%	19%	2%

precision		予測						
		0	1	2	3	4	5	6
実測	0	97%	55%	19%	3%	0%	0%	
	1	3%	41%	11%	0%	0%	0%	
	2	0%	2%	39%	1%	0%	0%	
	3	0%	1%	29%	82%	0%	0%	
	4	0%	0%	1%	14%	31%	0%	
	5	0%	0%	0%	0%	69%	21%	
	6	0%	0%	0%	0%	0%	79%	

実は小さい		55%	11%	1%	0%	0%	19%
正しい	97%	41%	39%	82%	31%	21%	74%
実は大きい	3%	2%	29%	14%	69%	79%	5%
error	0%	2%	20%	4%	0%	0%	2%

AIS_Thorax	precision	recall	f1-score	support	予測平均
0	0.97	0.74	0.84	7416	0.28
1	0.41	0.86	0.56	1592	0.96
2	0.39	0.80	0.53	314	1.79
3	0.82	0.45	0.58	431	2.32
4	0.31	0.25	0.28	59	2.97
5	0.21	0.08	0.11	39	3.87
6	0.00	0.00		11	5.00
計				9862	
accuracy	0.74				

AIS_Abdomen

		予測							
		0	1	2	3	4	5	6	計
実測	0	7196	1135	59	3	0	0	0	8393
	1	121	999	16	0	0	0	0	1136
	2	8	28	146	1	0	0	0	183
	3	4	11	19	31	0	0	0	65
	4	2	11	3	38	7	0	0	61
	5	2	1	1	0	17	2	0	23
	6	1	0	0	0	0	1	0	2
	計	7334	2185	244	73	24	3	0	9863

recall		予測						
		0	1	2	3	4	5	6
実測	0	86%	14%	1%	0%	0%	0%	0%
	1	11%	88%	1%	0%	0%	0%	0%
	2	4%	15%	80%	1%	0%	0%	0%
	3	6%	17%	29%	48%	0%	0%	0%
	4	3%	18%	5%	62%	11%	0%	0%
	5	9%	4%	4%	0%	74%	9%	0%
	6	50%	0%	0%	0%	0%	50%	0%

小さく予測	正しく予測	大きく予測	error
	86%	14%	1%
11%	88%	1%	0%
15%	80%	1%	4%
29%	48%	0%	23%
62%	11%	0%	26%
74%	9%	0%	17%
50%	0%	0%	50%
2%	85%	12%	1%

precision		予測						
		0	1	2	3	4	5	6
実測	0	98%	52%	24%	4%	0%	0%	
	1	2%	46%	7%	0%	0%	0%	
	2	0%	1%	60%	1%	0%	0%	
	3	0%	1%	8%	42%	0%	0%	
	4	0%	1%	1%	52%	29%	0%	
	5	0%	0%	0%	0%	71%	67%	
	6	0%	0%	0%	0%	0%	33%	

実は小さい		52%	7%	1%	0%	0%	12%
正しい	98%	46%	60%	42%	29%	67%	85%
実は大きい	2%	1%	8%	52%	71%	33%	2%
error	0%	1%	26%	4%	0%	0%	1%

AIS_Abdomen	precision	recall	f1-score	support	予測平均
0	0.98	0.86	0.92	8393	0.15
1	0.46	0.88	0.60	1136	0.91
2	0.60	0.80	0.68	183	1.75
3	0.42	0.48	0.45	65	2.18
4	0.29	0.11	0.16	61	2.61
5	0.67	0.09	0.15	23	3.52
6	0.00	0.00		2	2.50
計				9863	
accuracy	0.85				

AIS_Spine

		予測							
		0	1	2	3	4	5	6	計
実測	0	6722	1331	44	4	1	0	0	8102
	1	144	1154	8	0	0	0	0	1306
	2	20	59	216	0	0	0	0	295
	3	7	18	60	57	0	0	0	142
	4	0	2	0	6	4	0	0	12
	5	0	2	0	0	8	0	0	10
	6	0	0	1	0	0	2	0	3
	計	6893	2566	329	67	13	2	0	9870

recall		予測						
		0	1	2	3	4	5	6
実測	0	83%	16%	1%	0%	0%	0%	0%
	1	11%	88%	1%	0%	0%	0%	0%
	2	7%	20%	73%	0%	0%	0%	0%
	3	5%	13%	42%	40%	0%	0%	0%
	4	0%	17%	0%	50%	33%	0%	0%
	5	0%	20%	0%	0%	80%	0%	0%
	6	0%	0%	33%	0%	0%	67%	0%

小さく予測	正しく予測	大きく予測	error
	83%	16%	1%
11%	88%	1%	0%
20%	73%	0%	7%
42%	40%	0%	18%
50%	33%	0%	17%
80%	0%	0%	20%
67%	0%	0%	33%
3%	83%	14%	1%

precision		予測						
		0	1	2	3	4	5	6
実測	0	98%	52%	13%	6%	8%	0%	
	1	2%	45%	2%	0%	0%	0%	
	2	0%	2%	66%	0%	0%	0%	
	3	0%	1%	18%	85%	0%	0%	
	4	0%	0%	0%	9%	31%	0%	
	5	0%	0%	0%	0%	62%	0%	
	6	0%	0%	0%	0%	0%	100%	

実は小さい		52%	2%	0%	0%	0%	14%
正しい	98%	45%	66%	85%	31%	0%	83%
実は大きい	2%	2%	18%	9%	62%	100%	3%
error	0%	1%	14%	6%	8%	0%	1%

AIS_Spine	precision	recall	f1-score	support	予測平均
0	0.98	0.83	0.90	8102	0.18
1	0.45	0.88	0.60	1306	0.90
2	0.66	0.73	0.69	295	1.66
3	0.85	0.40	0.55	142	2.18
4	0.31	0.33	0.32	12	3.00
5	0.00	0.00		10	3.40
6	0.00	0.00		3	4.00
計				9870	
accuracy	0.83				

AIS_UpperEx

		予測							
		0	1	2	3	4	5	6	計
実測	0	5133	1286	12	0	0	0	0	6431
	1	210	2588	18	0	0	0	0	2816
	2	17	119	423	0	0	0	0	559
	3	2	9	9	42	0	0	0	62
	4	0	0	0	5	1	0	0	6
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	計	5362	4002	462	47	1	0	0	9874

recall		予測						
		0	1	2	3	4	5	6
実測	0	80%	20%	0%	0%	0%	0%	0%
	1	7%	92%	1%	0%	0%	0%	0%
	2	3%	21%	76%	0%	0%	0%	0%
	3	3%	15%	15%	68%	0%	0%	0%
	4	0%	0%	0%	83%	17%	0%	0%
	5							
	6							

小さく予測	正しく予測	大きく予測	error
	80%	20%	0%
7%	92%	1%	0%
21%	76%	0%	3%
15%	68%	0%	18%
83%	17%	0%	0%
0%	0%	0%	100%
0%	0%	0%	100%
3%	83%	13%	0%

precision		予測						
		0	1	2	3	4	5	6
実測	0	96%	32%	3%	0%	0%		
	1	4%	65%	4%	0%	0%		
	2	0%	3%	92%	0%	0%		
	3	0%	0%	2%	89%	0%		
	4	0%	0%	0%	11%	100%		
	5	0%	0%	0%	0%	0%		
	6	0%	0%	0%	0%	0%		

実は小さい		32%	4%	0%	0%		13%
正しい	96%	65%	92%	89%	100%		83%
実は大きい	4%	3%	2%	11%	0%		3%
error	0%	0%	3%	0%	0%		0%

AIS_UpperEx	precision	recall	f1-score	support	予測平均
0	0.96	0.80	0.87	6431	0.20
1	0.65	0.92	0.76	2816	0.93
2	0.92	0.76	0.83	559	1.73
3	0.89	0.68	0.77	62	2.47
4	1.00	0.17	0.29	6	3.17
5	0.00	0.00		0	
6	0.00	0.00		0	
計				9874	
accuracy	0.83				

AIS_LowerEx

		予測							
		0	1	2	3	4	5	6	計
実測	0	5238	1483	54	0	0	0	0	6775
	1	219	2044	85	1	0	0	0	2349
	2	10	85	345	0	0	0	0	440
	3	7	30	110	154	0	0	0	301
	4	1	3	2	11	2	0	0	19
	5	0	0	0	0	1	0	0	1
	6	0	0	0	0	0	0	0	0
	計	5475	3645	596	166	3	0	0	9885

recall		予測						
		0	1	2	3	4	5	6
実測	0	77%	22%	1%	0%	0%	0%	0%
	1	9%	87%	4%	0%	0%	0%	0%
	2	2%	19%	78%	0%	0%	0%	0%
	3	2%	10%	37%	51%	0%	0%	0%
	4	5%	16%	11%	58%	11%	0%	0%
	5	0%	0%	0%	0%	100%	0%	0%
	6							

小さく予測	正しく予測	大きく予測	error
	77%	22%	1%
9%	87%	4%	0%
19%	78%	0%	2%
37%	51%	0%	12%
58%	11%	0%	32%
100%	0%	0%	0%
0%	0%	0%	100%
4%	79%	16%	1%

precision		予測						
		0	1	2	3	4	5	6
実測	0	96%	41%	9%	0%	0%		
	1	4%	56%	14%	1%	0%		
	2	0%	2%	58%	0%	0%		
	3	0%	1%	18%	93%	0%		
	4	0%	0%	0%	7%	67%		
	5	0%	0%	0%	0%	33%		
	6	0%	0%	0%	0%	0%		

実は小さい		41%	14%	0%	0%		16%
正しい	96%	56%	58%	93%	67%		79%
実は大きい	4%	2%	18%	7%	33%		4%
error	0%	1%	9%	1%	0%		1%

トレーニングデータを含む全データ

AIS_LowerEx	precision	recall	f1-score	support	予測平均
0	0.96	0.77	0.86	6775	0.23
1	0.56	0.87	0.68	2349	0.94
2	0.58	0.78	0.67	440	1.76
3	0.93	0.51	0.66	301	2.37
4	0.67	0.11	0.18	19	2.53
5	0.00	0.00		1	4.00
6	0.00	0.00		0	
計				9885	
accuracy	0.79				

AIS_Unspecified

		予測							
		0	1	2	3	4	5	6	計
実測	0	9543	148	3	0	0	0	0	9694
	1	37	150	0	0	0	0	0	187
	2	1	0	3	0	0	0	0	4
	3	1	0	1	2	0	0	0	4
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0
	計	9582	298	7	2	0	0	0	9889

recall		予測						
		0	1	2	3	4	5	6
実測	0	98%	2%	0%	0%	0%	0%	0%
	1	20%	80%	0%	0%	0%	0%	0%
	2	25%	0%	75%	0%	0%	0%	0%
	3	25%	0%	25%	50%	0%	0%	0%
	4							
	5							
	6							

小さく予測	正しく予測	大きく予測	error
	98%	2%	0%
20%	80%	0%	0%
0%	75%	0%	25%
25%	50%	0%	25%
0%	0%	0%	100%
0%	0%	0%	100%
0%	0%	0%	100%
0%	98%	1%	0%

precision		予測						
		0	1	2	3	4	5	6
実測	0	100%	50%	43%	0%			
	1	0%	50%	0%	0%			
	2	0%	0%	43%	0%			
	3	0%	0%	14%	100%			
	4	0%	0%	0%	0%			
	5	0%	0%	0%	0%			
	6	0%	0%	0%	0%			
	実は小さい		50%	0%	0%			1%
	正しい	100%	50%	43%	100%			98%
	実は大きい	0%	0%	14%	0%			0%
	error	0%	0%	43%	0%			0%

AIS_Unspecified	precision	recall	f1-score	support	予測平均
0	1.00	0.98	0.99	9694	0.02
1	0.50	0.80	0.62	187	0.80
2	0.43	0.75	0.55	4	1.50
3	1.00	0.50	0.67	4	2.00
4	0.00	0.00			
5	0.00	0.00			
6	0.00	0.00			
計				9889	
accuracy	0.98				

AIS_Other

		予測							
		0	1	2	3	4	5	6	計
実測	0	9650	159	2	0	0	0	0	9811
	1	8	38	0	0	0	0	0	46
	2	1	0	1	0	0	0	0	2
	3	1	0	5	3	0	0	0	9
	4	0	0	0	0	0	0	0	0
	5	0	0	0	0	1	0	0	1
	6	0	0	0	0	0	0	0	0
	計	9660	197	8	3	1	0	0	9869

recall		予測						
		0	1	2	3	4	5	6
実測	0	98%	2%	0%	0%	0%	0%	0%
	1	17%	83%	0%	0%	0%	0%	0%
	2	50%	0%	50%	0%	0%	0%	0%
	3	11%	0%	56%	33%	0%	0%	0%
	4							
	5							
	6							

小さく予測	正しく予測	大きく予測	error
	98%	2%	0%
17%	83%	0%	0%
0%	50%	0%	50%
56%	33%	0%	11%
0%	0%	0%	100%
0%	0%	0%	100%
0%	0%	0%	100%
0%	98%	2%	0%

precision		予測						
		0	1	2	3	4	5	6
実測	0	100%	81%	25%	0%	0%		
	1	0%	19%	0%	0%	0%		
	2	0%	0%	13%	0%	0%		
	3	0%	0%	63%	100%	0%		
	4	0%	0%	0%	0%	0%		
	5	0%	0%	0%	0%	100%		
	6	0%	0%	0%	0%	0%		

実は小さい		81%	0%	0%	0%		2%
正しい	100%	19%	13%	100%	0%		98%
実は大きい	0%	0%	63%	0%	100%		0%
error	0%	0%	25%	0%	0%		0%

AIS_Other	precision	recall	f1-score	support	予測平均
0	1.00	0.98	0.99	9811	0.02
1	0.19	0.83	0.31	46	0.83
2	0.13	0.50	0.20	2	1.00
3	1.00	0.33	0.50	9	2.11
4	0.00	0.00		0	
5	0.00	0.00		1	4.00
6	0.00	0.00		0	
計				9869	
accuracy	0.98				

Death

death

	precision	recall	f1-score	support	予測平均
0	0.99	1.00	1.00	9617	0.015
1	0.93	0.80	0.86	272	0.704
計				9889	
accuracy	0.99				