

# IS-655 Lab Week#14 Models Build & Comparison 00000034000

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IS-655 Lab Week#14 00000034000-WillibrordusBayu

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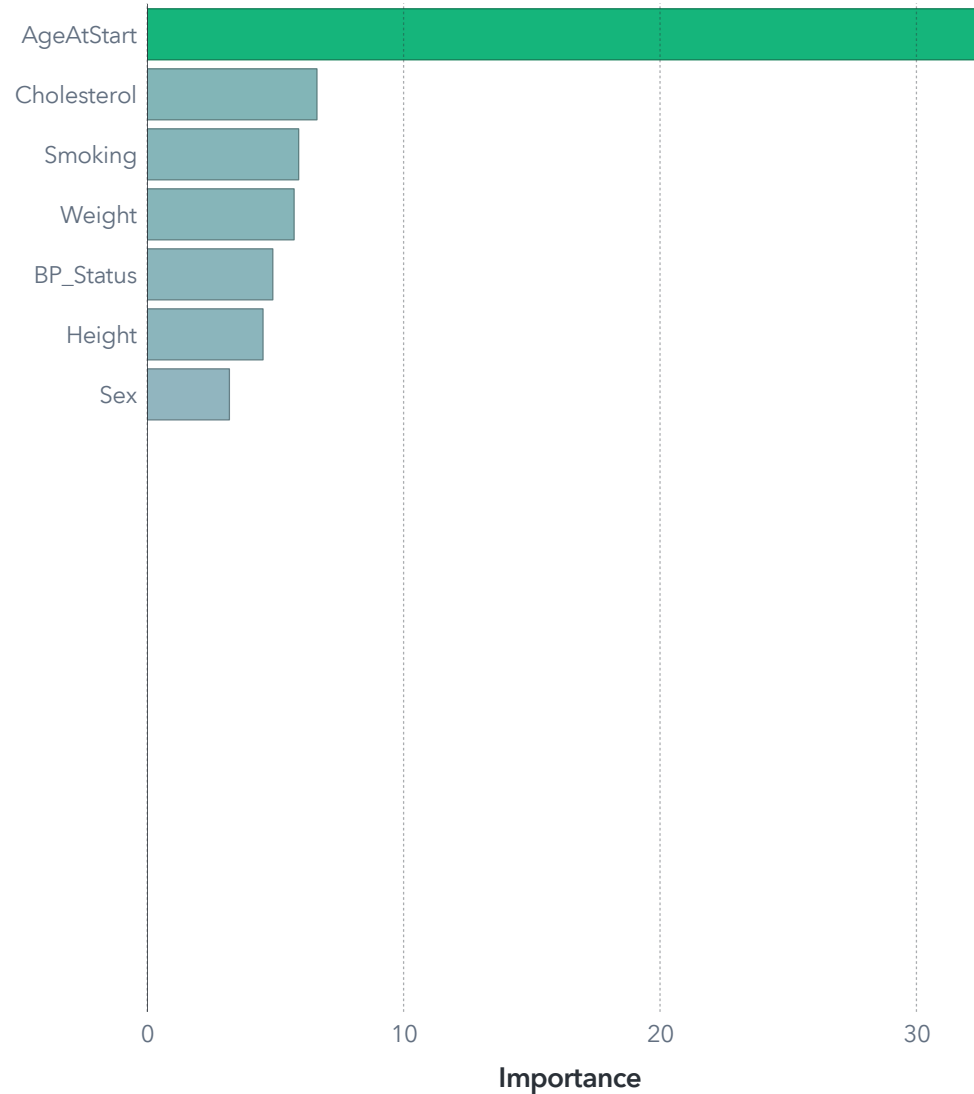
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# Gradient Boosting



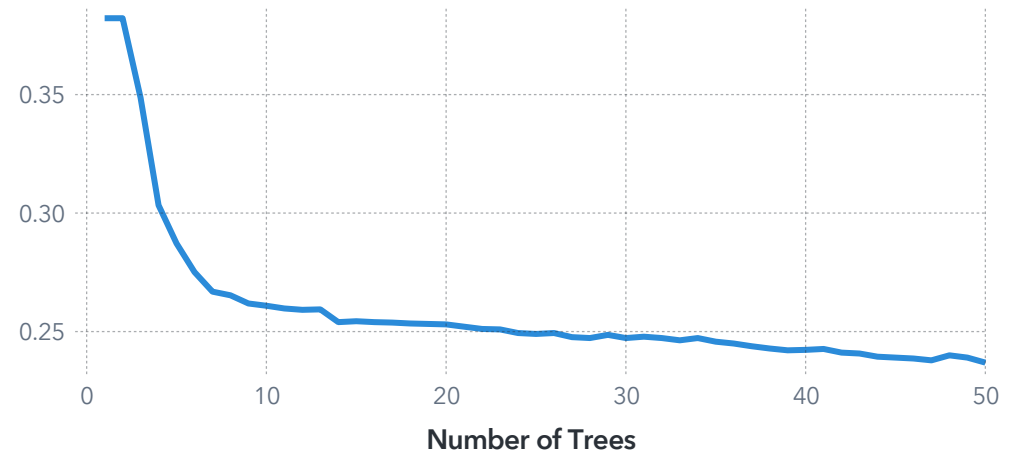
Gradient Boosting **Status** (event=Dead) Misclassification Rate **0.2369** Observations Used **5,209**

## Variable Importance



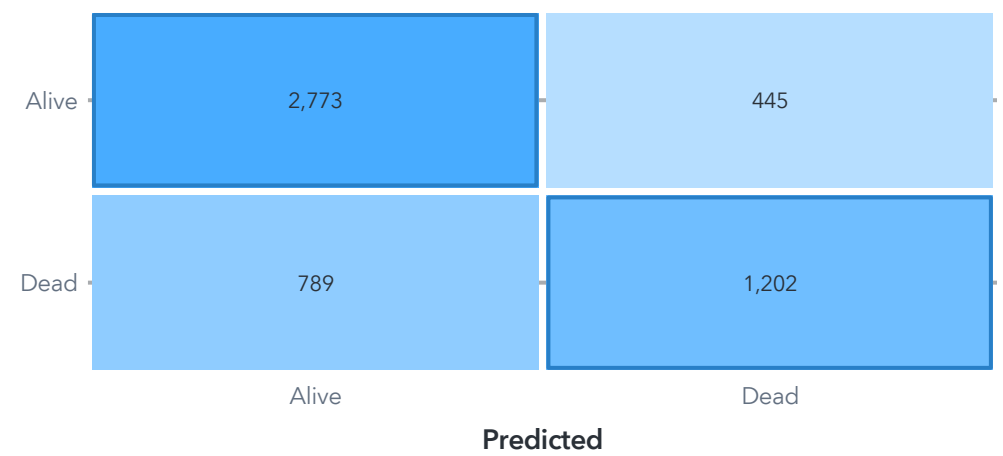
## Iteration Plot

### Misclassification Rate



## Confusion Matrix

### Observed



Variable	Importance	Standard Deviation
AgeAtStart	32.5996	29.4473
Cholesterol	6.6207	1.3267
Smoking	5.9089	4.0883
Weight	5.7297	1.2133
BP_Status	4.9002	4.3397
Height	4.5185	1.0023
Sex	3.2078	3.6699

Number of Trees	Misclassification Rate
1	0.3822
2	0.3822
3	0.3486
4	0.3033
5	0.2872
6	0.2751
7	0.2668
8	0.2653
9	0.2619
10	0.2609
11	0.2597
12	0.2592
13	0.2594
14	0.2540
15	0.2544
16	0.2540
17	0.2538
18	0.2534
19	0.2532
20	0.2530
21	0.2521
22	0.2511
23	0.2509
24	0.2494
25	0.2490
26	0.2494
27	0.2476
28	0.2473
29	0.2486
30	0.2473
31	0.2478
32	0.2473
33	0.2463
34	0.2473
35	0.2457
36	0.2450
37	0.2438
38	0.2428
39	0.2421
40	0.2423
41	0.2427
42	0.2411
43	0.2407
44	0.2394
45	0.2390
46	0.2386
47	0.2379
48	0.2400
49	0.2390
50	0.2369

Gradient boosting - Status 1 Supplement 3

Predicted	Observed	Frequency	Percentage
Alive	Alive	2,773	86.17%
Dead	Alive	445	13.83%
Alive	Dead	789	39.63%
Dead	Dead	1,202	60.37%

Percentile	Observations	Events	Model	Best	Cumulative Model	Cumulative Best
5.00	261	251	2.5213	2.6218	2.5213	2.6218
10.00	261	223	2.2401	2.6218	2.3807	2.6218
15.00	261	193	1.9387	2.6218	2.2334	2.6218
20.00	261	195	1.9588	2.6218	2.1647	2.6218
25.00	261	152	1.5269	2.6218	2.0372	2.6218
30.00	261	138	1.3862	2.6218	1.9287	2.6218
35.00	261	132	1.3260	2.6218	1.8426	2.6218
40.00	261	110	1.1050	1.6474	1.7504	2.5000
45.00	261	103	1.0347	0.0000	1.6709	2.2222
50.00	261	90	0.9041	0.0000	1.5942	2.0000
55.00	261	91	0.9141	0.0000	1.5324	1.8182
60.00	261	63	0.6328	0.0000	1.4574	1.6667
65.00	261	66	0.6630	0.0000	1.3963	1.5385
70.00	261	51	0.5123	0.0000	1.3331	1.4286
75.00	261	32	0.3214	0.0000	1.2657	1.3333
80.00	261	33	0.3315	0.0000	1.2073	1.2500
85.00	261	23	0.2310	0.0000	1.1499	1.1765
90.00	261	24	0.2411	0.0000	1.0994	1.1111
95.00	261	14	0.1406	0.0000	1.0489	1.0526
100.00	250	7	0.0703	0.0000	1.0000	1.0000

Cutoff	Sensitivity	1 - Specificity
0.00	1.0000	1.000
0.01	1.0000	1.000
0.02	1.0000	1.000
0.03	1.0000	1.000
0.04	1.0000	0.997
0.05	0.9995	0.987
0.06	0.9995	0.966
0.07	0.9990	0.936
0.08	0.9950	0.898
0.09	0.9925	0.862
0.10	0.9869	0.824
0.11	0.9799	0.782
0.12	0.9749	0.749
0.13	0.9719	0.716
0.14	0.9638	0.685
0.15	0.9553	0.651
0.16	0.9488	0.625
0.17	0.9422	0.599
0.18	0.9357	0.568
0.19	0.9272	0.543
0.20	0.9191	0.521
0.21	0.9086	0.494
0.22	0.9006	0.472
0.23	0.8890	0.455
0.24	0.8805	0.442
0.25	0.8719	0.420
0.26	0.8659	0.406
0.27	0.8579	0.389
0.28	0.8458	0.374
0.29	0.8348	0.362
0.30	0.8237	0.350
0.31	0.8147	0.337
0.32	0.8041	0.328
0.33	0.7956	0.316
0.34	0.7885	0.300
0.35	0.7780	0.289
0.36	0.7644	0.278
0.37	0.7559	0.268
0.38	0.7474	0.258
0.39	0.7358	0.246
0.40	0.7233	0.235
0.41	0.7107	0.224
0.42	0.6971	0.214
0.43	0.6816	0.201
0.44	0.6740	0.191
0.45	0.6625	0.180
0.46	0.6519	0.172
0.47	0.6394	0.167
0.48	0.6273	0.157
0.49	0.6158	0.149
0.50	0.6037	0.138
0.51	0.5846	0.133
0.52	0.5746	0.126
0.53	0.5595	0.117
0.54	0.5460	0.109
0.55	0.5319	0.101
0.56	0.5203	0.096
0.57	0.5093	0.091
0.58	0.4962	0.084
0.59	0.4862	0.080
0.60	0.4711	0.074
0.61	0.4555	0.067
0.62	0.4435	0.061
0.63	0.4309	0.055
0.64	0.4174	0.051
0.65	0.4023	0.049
0.66	0.3857	0.046
0.67	0.3712	0.044
0.68	0.3596	0.040
0.69	0.3451	0.038
0.70	0.3300	0.033
0.71	0.3129	0.031
0.72	0.2948	0.027
0.73	0.2813	0.025
0.74	0.2622	0.021
0.75	0.2526	0.018
0.76	0.2386	0.015
0.77	0.2255	0.014
0.78	0.2074	0.012
0.79	0.1909	0.009
0.80	0.1778	0.007
0.81	0.1627	0.006
0.82	0.1472	0.006
0.83	0.1366	0.005
0.84	0.1231	0.002
0.85	0.1095	0.002
0.86	0.0959	0.002
0.87	0.0834	0.001
0.88	0.0663	0.001
0.89	0.0563	0.000
0.90	0.0432	0.000
0.91	0.0316	0.000
0.92	0.0231	0.000
0.93	0.0116	0.000
0.94	0.0045	0.000
0.95	0.0005	0.000
0.96	0.0000	0.000
0.97	0.0000	0.000
0.98	0.0000	0.000
0.99	0.0000	0.000



Response	Event	Value	Frequency
Correct	Dead	True Positive	1,202
Incorrect	Dead	False Negative	789
Correct	Alive	True Negative	2,773
Incorrect	Alive	False Positive	445

Gradient boosting - Status 1 Supplement 7

[illegible]