



Index	cost	clicks ▽	CTR	CPC	bidprice
84	6249974	79	0.000577355	45.6766	85
89	6249984	79	0.000605118	47.8732	90
102	6249979	79	0.000636537	50.3588	103

constant

lowerbound	upperbound	paid	click ▽	CTR	CPC
64	145	6249.89	82	0.000909247	107.221
67	91	6249.94	82	0.000672239	79.2728
81	86	6249.93	82	0.000703945	83.0114

Random

Logistic Regression to predict CTR

basebid	paid	click ▽	CTR	CPC
56	6.10148e+06	118	0.00157708	81.5466
57	6.23323e+06	118	0.0015521	81.9881
55	5.96795e+06	117	0.00159041	81.1237

linear

c	paid	click ▽	ctr	cpc
2.7	5.9988e+06	116	0.0012591	65.113
2.8	6.20273e+06	116	0.00123566	66.0729
2.6	5.7964e+06	114	0.00126109	64.1209

Non_linear_1(1/2)

c	paid	click ▽	ctr	cpc
8.8	5.84956e+06	106	0.00101249	55.874
8.9	5.9448e+06	106	0.00100361	56.2853
9	6.03908e+06	106	0.000994988	56.6869

Non_linear_2(1/3)

basebid	paid	click ▽	CTR	CPC
43	6.19879e+06	114	0.00218278	118.689
44	6.24991e+06	114	0.00216549	118.72
41	6.00128e+06	113	0.00223426	118.659

Non_linear_3(2)

basebid	paid	click ▽	CTR	CPC
39	6.24981e+06	112	0.00236561	132.006
33	5.87455e+06	111	0.00249797	132.203
34	5.97205e+06	111	0.00245499	132.084

Non_linear_4(5/2)

XGBoost

basebid	paid	click ▽	CTR	CPC
72	6.17985e+06	121	0.00130103	66.4479
61	4.99041e+06	120	0.00148715	61.846
62	5.0901e+06	120	0.00146719	62.2346

Linear

c	paid	click ▽	ctr	cpc
2.8	5.33099e+06	124	0.00127577	54.8479
2.9	5.50803e+06	124	0.00125505	55.7487
3	5.67942e+06	124	0.00123539	56.5832

Non_linear_1(1/2)

c	paid	click ▽	ctr	cpc
9.2	6.07393e+06	114	0.00102012	54.3519
9.3	6.17262e+06	114	0.00101091	54.7364
9.4	6.24999e+06	114	0.00100511	55.1048

Non_linear_2(1/3)

basebid	paid	click ▽	CTR	CPC
85	6.24992e+06	121	0.00176272	91.0483
83	6.1376e+06	120	0.00178076	91.0799
84	6.19485e+06	120	0.00176499	91.1155

Non_linear_3(2)

basebid	paid	click ▽	CTR	CPC
90	6.23632e+06	121	0.0020061	103.394
92	6.24995e+06	121	0.00199917	103.262
93	6.24997e+06	121	0.00200069	103.341

Non_linear_4(5/2)