

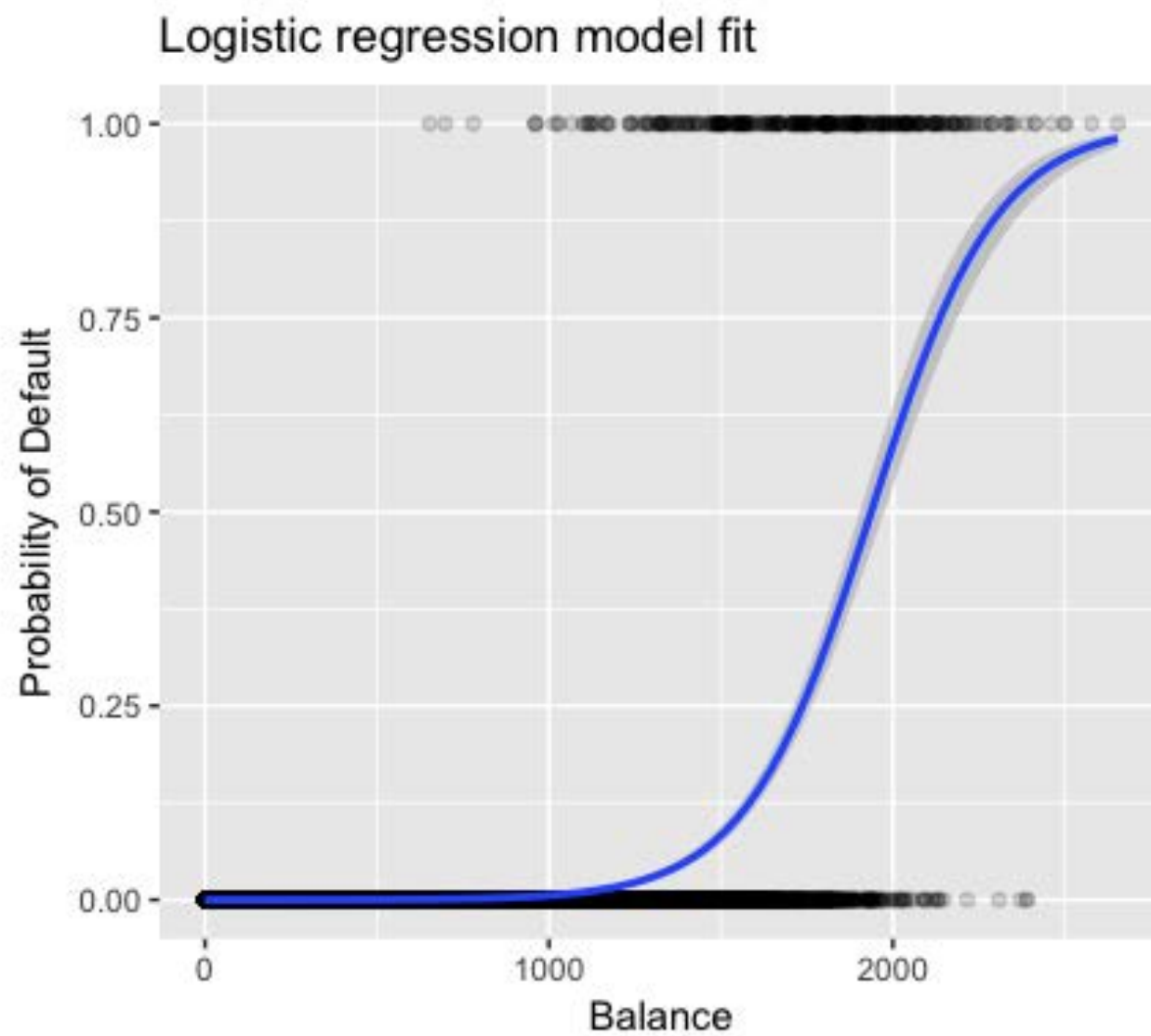
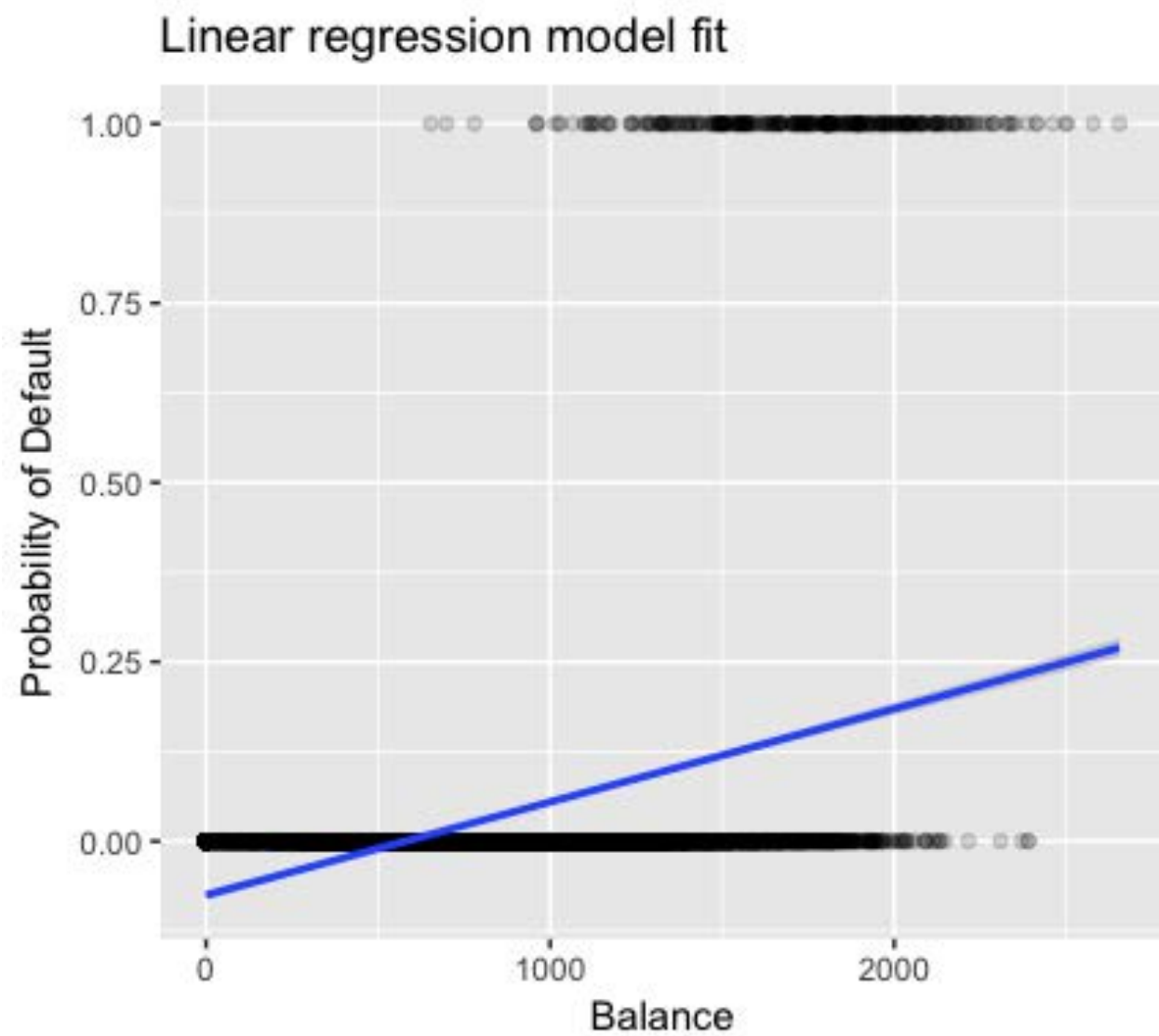
# ENM 53 I: Data-driven modeling and probabilistic scientific computing

## *Lecture #7: Logistic regression*

Paris Perdikaris  
February 11, 2020



# Logistic regression



# Confusion matrix

Actual	A	12	0	0	0	0	0	1	0	0	0
	B	0	10	0	0	0	0	0	0	2	0
	C	0	0	10	0	0	0	7	0	0	0
	D	0	0	1	18	0	0	0	0	0	0
	E	0	0	0	0	18	0	0	0	0	0
	F	0	3	2	0	0	15	0	0	0	0
	G	0	0	0	0	0	0	17	0	0	0
	H	1	0	2	0	0	2	3	12	0	0
	I	0	3	1	1	0	0	1	0	13	0
	J	1	1	0	3	0	0	5	0	0	8
	A	B	C	D	E	F	G	H	I	J	
		Predicted									

Actual	A	12	0	0	0	0	0	1	0	0	0
	B	0	10	0	0	0	0	0	2	0	0
	C	0	0	10	0	0	0	0	7	0	0
	D	0	0	1	18	0	0	0	0	0	0
	E	0	0	0	0	18	0	0	0	0	0
	F	0	3	2	0	0	15	0	0	0	0
	G	0	0	0	0	0	0	17	0	0	0
	H	1	0	2	0	0	2	3	12	0	0
	I	0	3	1	1	0	0	1	0	13	0
	J	1	1	0	3	0	0	5	0	0	8
		Predicted									
		True Negatives									
		False Positives									
		False Negatives									
		TP									
		FN									
		FP									
		TN									

**accuracy (ACC)**

$$ACC = \frac{TP + TN}{P + N} = \frac{TP + TN}{TP + TN + FP + FN}$$