

## Machine learning system designs

Precision:

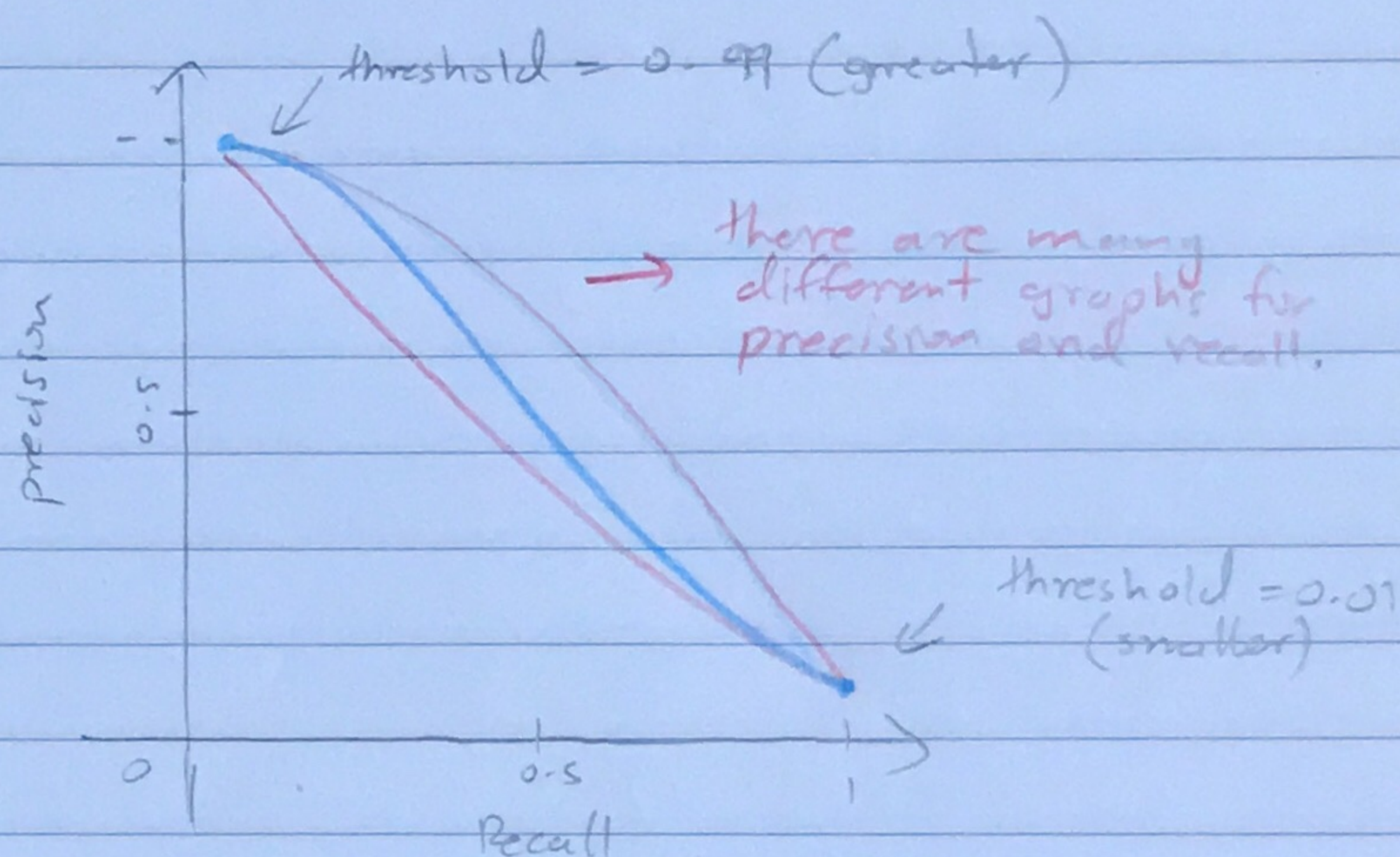
$$\frac{\text{True positive}}{\text{True pos} + \text{False pos}}$$

predicted

	Actual	
	1	0
1	True positive	False positive
0	False negative	True negative

Recall:

$$\frac{\text{True positive}}{\text{True pos} + \text{False negative}}$$



Fscore:

Which algorithm best?

	Precision	Recall	Fscore
Algorithm 1	0.5	0.4	0.444
Algorithm 2	0.7	0.1	0.175
Algorithm 3	0.02	1.0	0.0392

← this algorithm is best



$$F_{score} = \frac{2PR}{P+R}$$

$$\rightarrow P=0 \text{ or } R=0 \Rightarrow F_{score} = 0$$

$$\rightarrow P=1 \text{ and } R=0 \Rightarrow F_{score} = 1$$