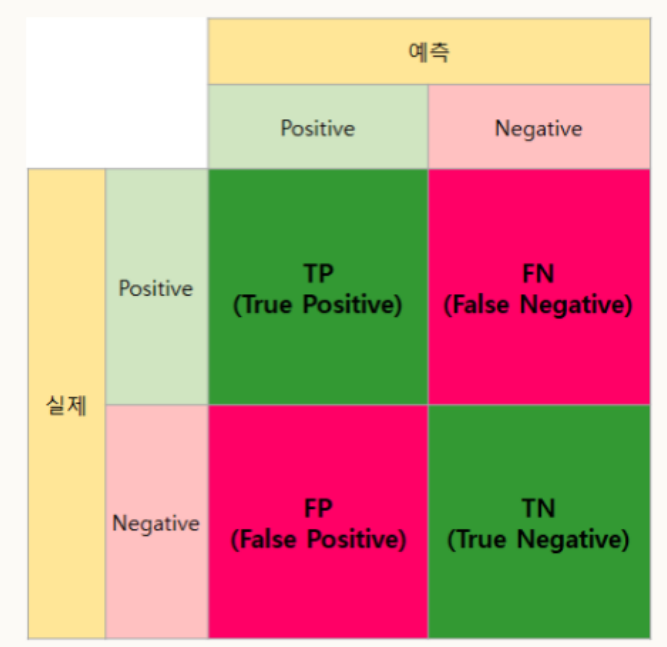
디지털 영상처리 연구실 연구보고서

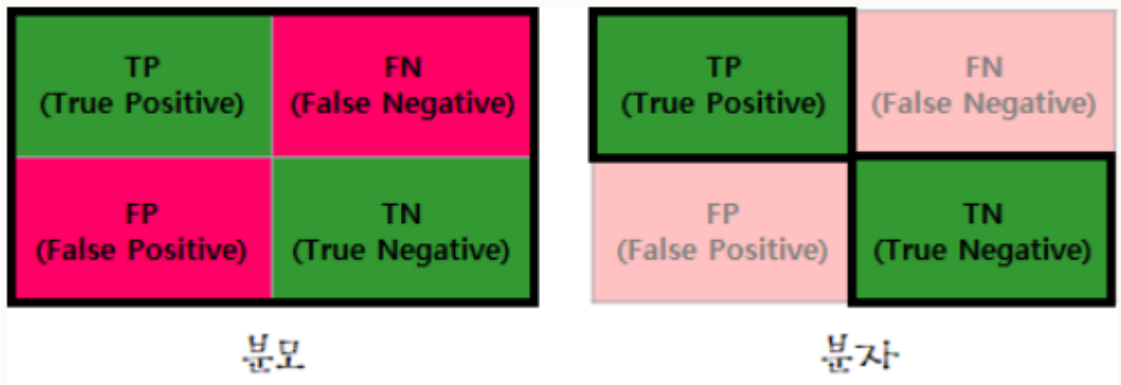
김우헌

##이진 분류의 혼동 행렬(Confusion matrix)

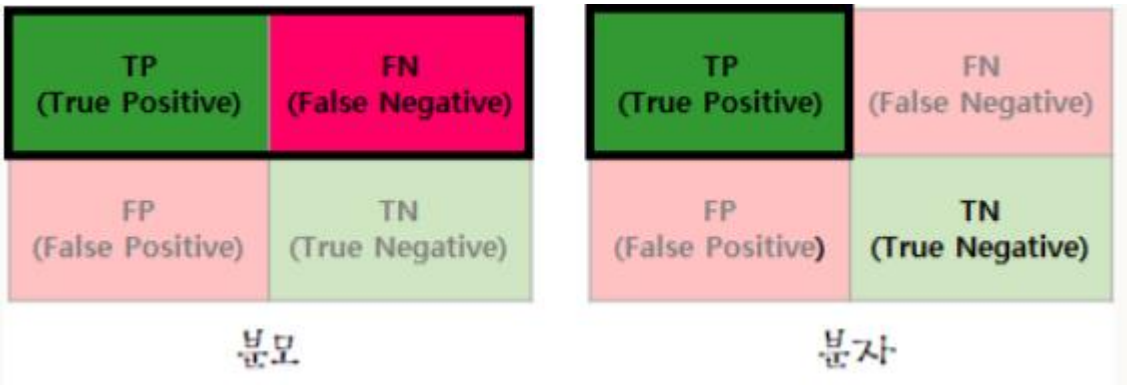
->성능평가 지표로 이용



#정확도(accuracy)

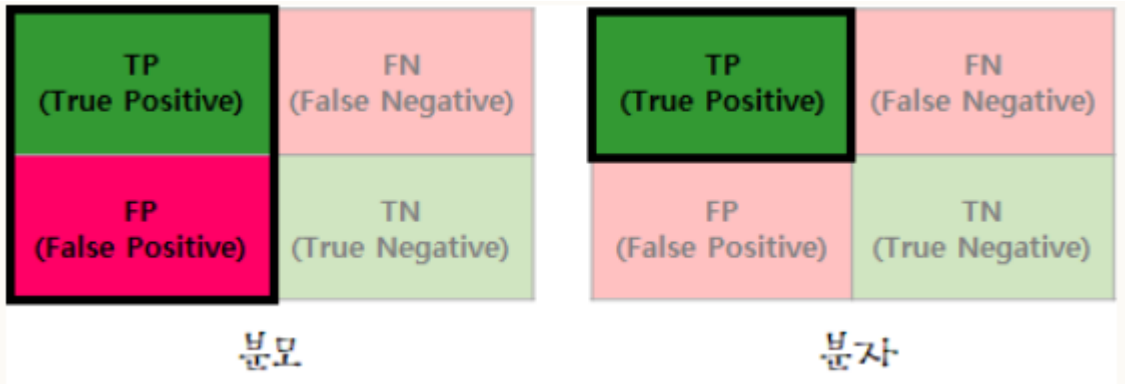


#recall(재현율)



->암환자판별

#precision(정밀도)



->스팸메일

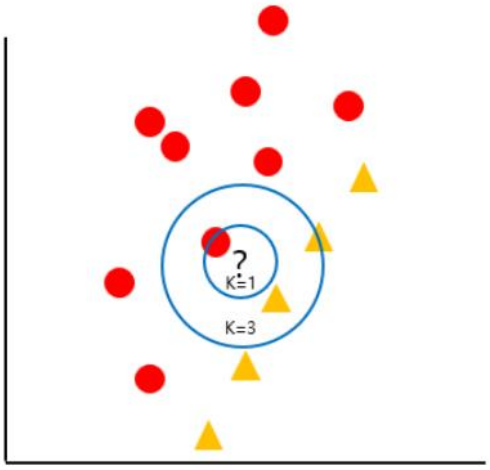
#F1-score

$$F_1 = 2 \cdot \frac{\mathrm{precision} \cdot \mathrm{recall}}{\mathrm{precision} + \mathrm{recall}} = \frac{\mathrm{TP}}{\mathrm{TP} + \frac{1}{2}(\mathrm{FP} + \mathrm{FN})}$$

->0~1 사이의 값을 가지며 높을수록 f1-score가 높을수록 분류기의 성능 좋다

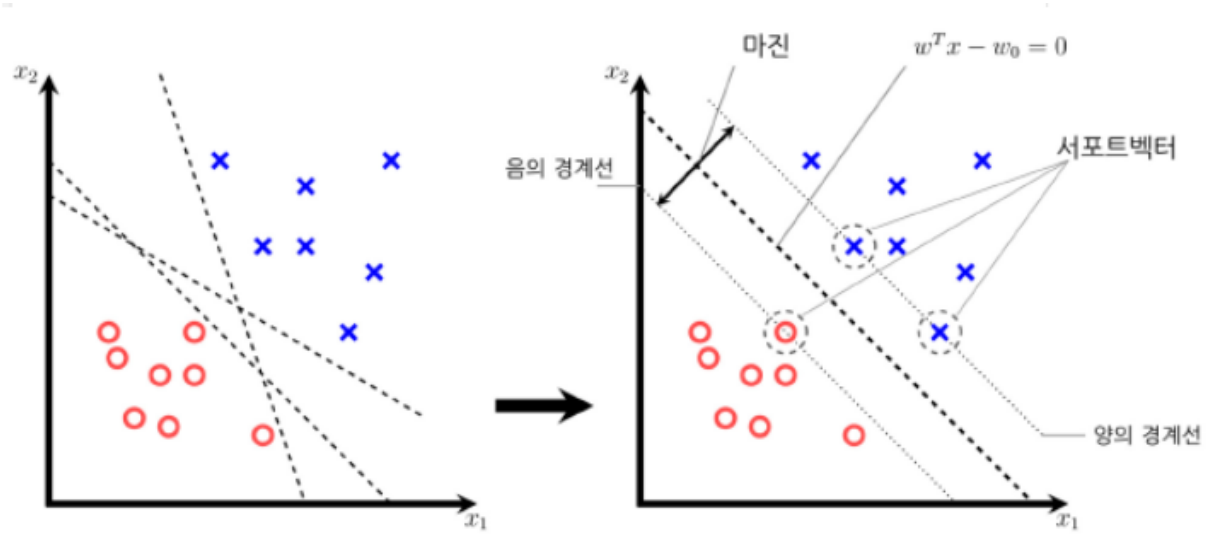
##머신러닝 알고리즘

#k-최근접 이웃



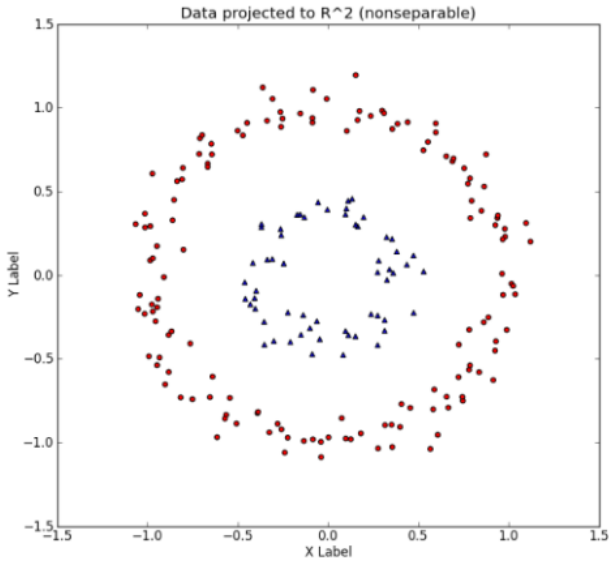
->주어진 데이터에 대한 분류

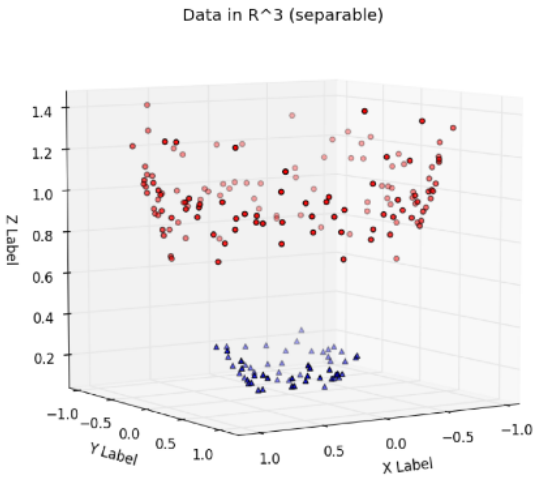
#SVM(서포트 벡터 머신)



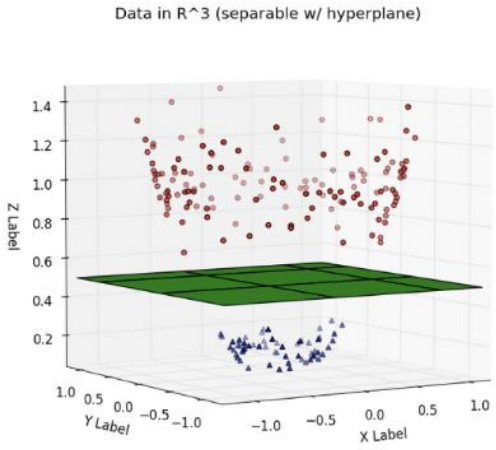
->초평면? 공간 내에서 특징에 따라 분류를 시키는 것 (2차원일경우 1차원, 3차원일경우 2차원)

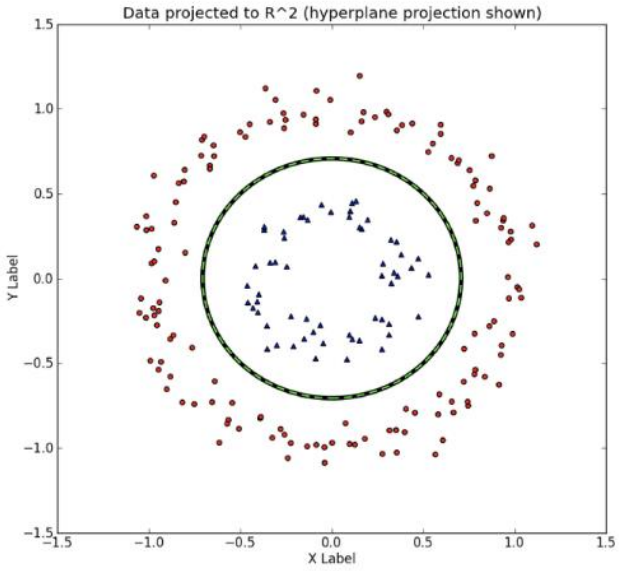
#비선형 SVM



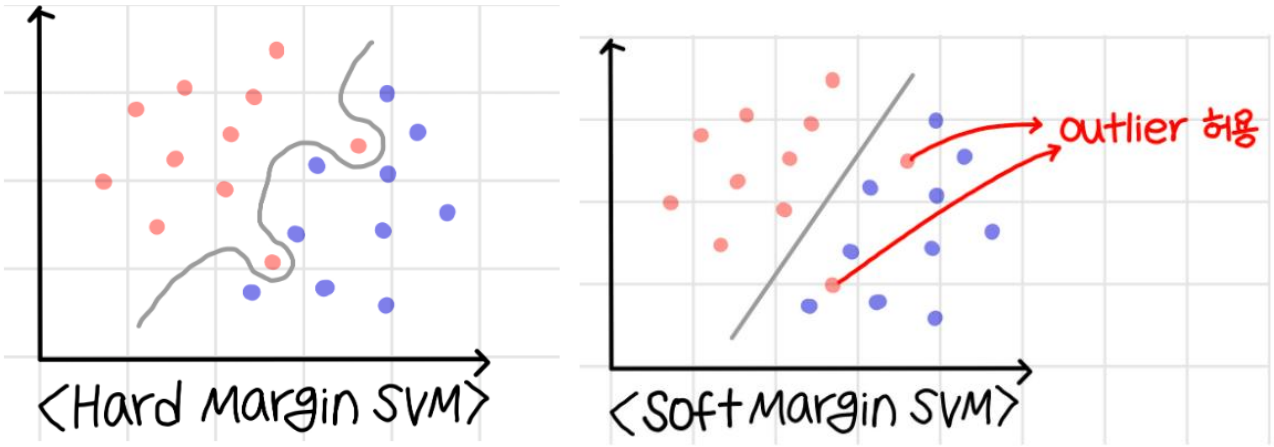


->비선형 문제일 경우 저차원 데이터를 고차원 데이터로 바꿔서 해결!(커널함수사용)

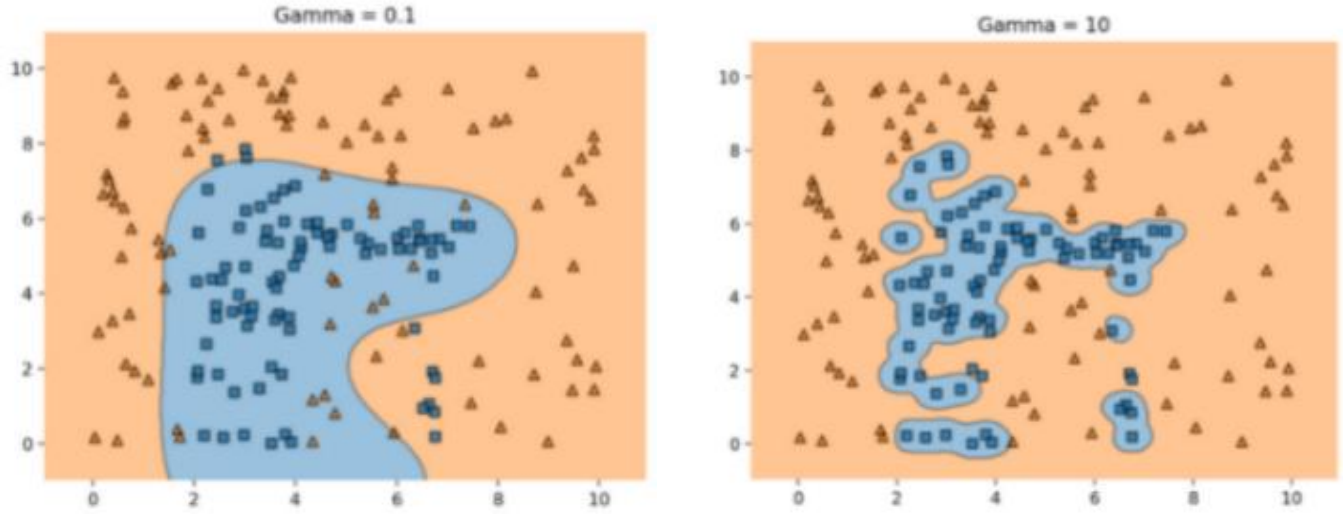




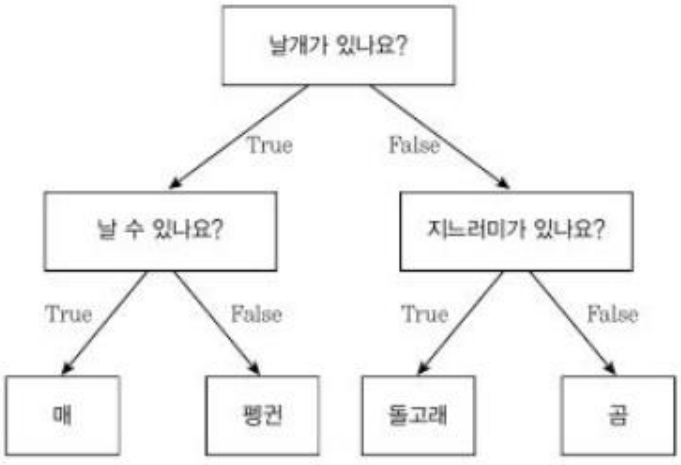
#하드마진,소프트 마진



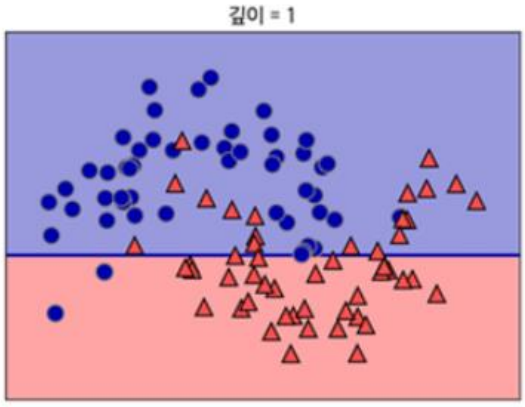
#파라미터 gamma

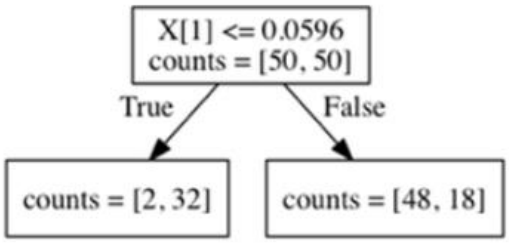


#결정 트리

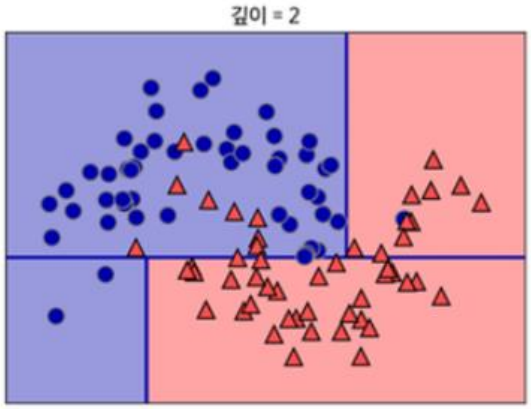


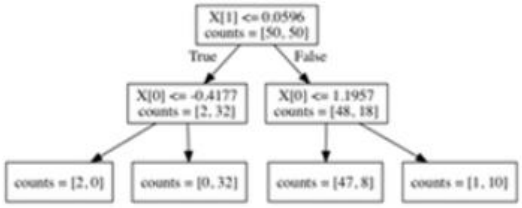
->불순도를 0에 가깝게 만드는 방향으로 학습진행!



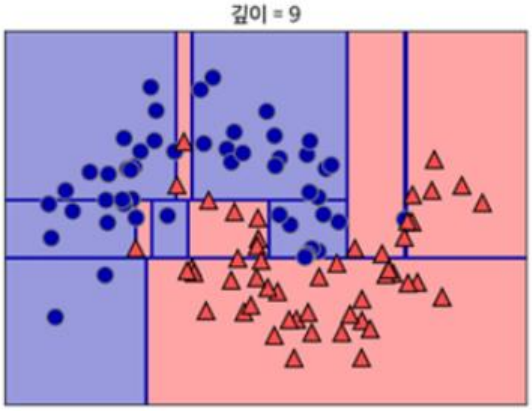


결정 트리 깊이 = 1





결정 트리 깊이 = 2



결정 트리 깊이 = 9