

1. (a) Describe the three main subfields of Machine Learning; give examples for each one and describe their differences and similarities. [6]
- (b) Describe two different Loss functions for regression and/or classification given training data $\{t_n, \mathbf{x}_n\}_{n=1}^N$ and a model estimate \hat{t}_n . [7]
- (c) Explain what is the Naive Bayes assumption of independence. Give an example where that assumption is violated and explain why. [6]
- (d) Give the mathematical description of the $F1$ score, *Sensitivity* and *Specificity*. What do they measure? What does a value of $F1 = 1$ say for our model? [6]