ML Problem Solving

Data as Vectors, Regression vs Classification

1. Consider the following table, representing information about a handful of people.

Name	Gender	Degree	Postcode	Age	Annual salary
Aditya	M	MSc	W21BG	36	89563
Bob	M	PhD	EC1a1BA	47	123543
Chloe	F	BEcon	SW1a1BH	26	23989
Daisuke	M	BSc	SE207AT	68	138769
Elisabeth	F	MBA	SE10AA	33	113888

How would you create a design matrix comprised of only numerical values?

2. Draw the data points from your design matrix in a coordinate system where the x-axis is the age and the y-axis is the salary. Draw a linear model on your coordinate system that has the smallest possible prediction error.

3. Draw the data points from your design matrix in a coordinate system where the x-axis is the degree and the y-axis is the salary. Draw a linear model on your coordinate system that has the smallest possible prediction error.

4. Draw the data points from your design matrix in a coordinate system where the x-axis is the postcode and the y-axis is the salary. Draw a linear model on your coordinate system that has the smallest possible prediction error.

5. For the following tasks, which are classification and which are regression ones?

(_____) Ordering a sandwhich at Ctrl-Alt-Deli

(_____) Estimating the size of a building from images

(_____) Predicting stock prices

(_____) Choosing stocks to purchase

(_____) Neural network outputs

(_____) Making a move in checkers

(_____) Ranking a user's Netflix shows

(_____) Selecting from different plans for moving a robot

(_____) Choosing a product from an Amazon search results page