Evaluating models
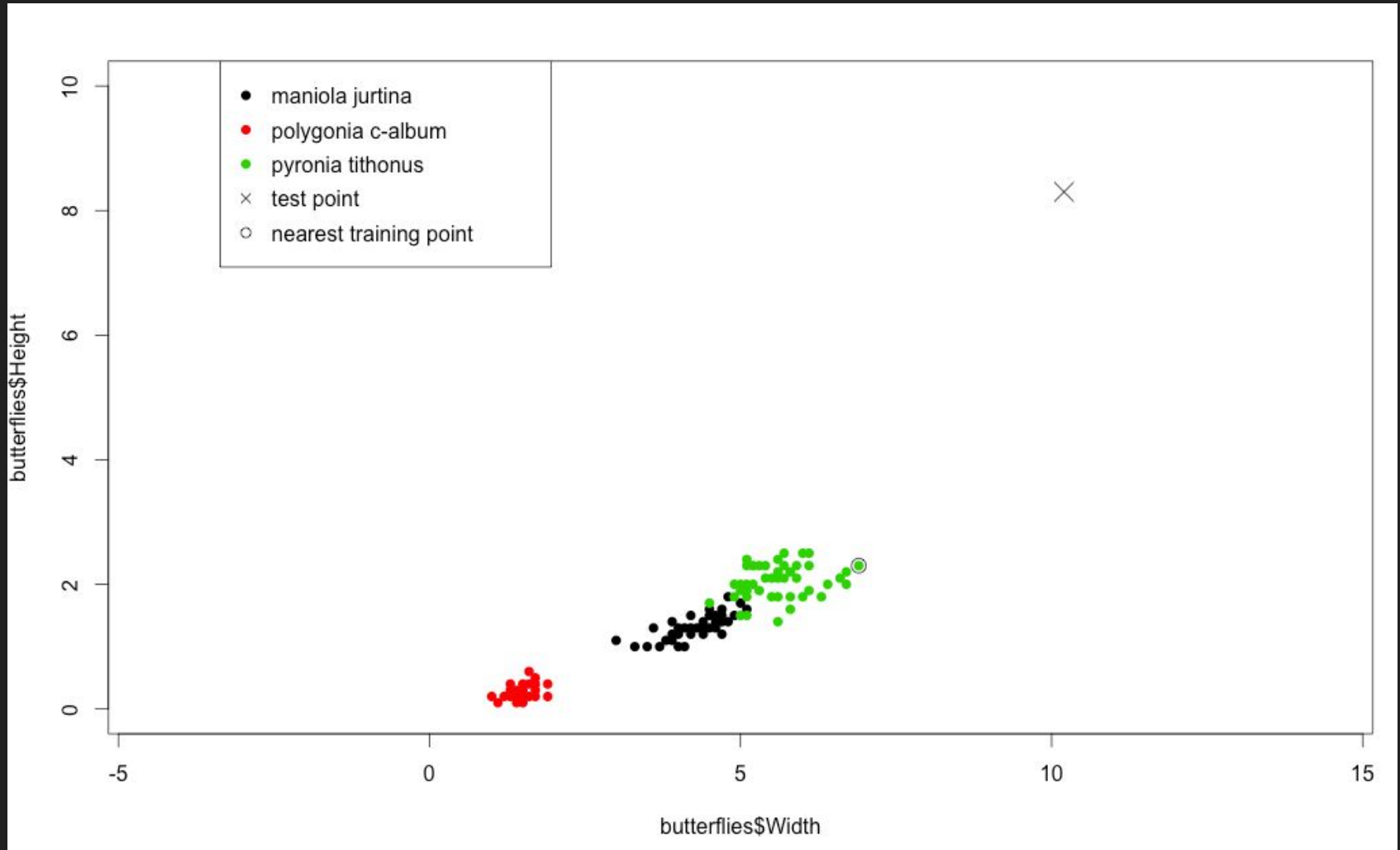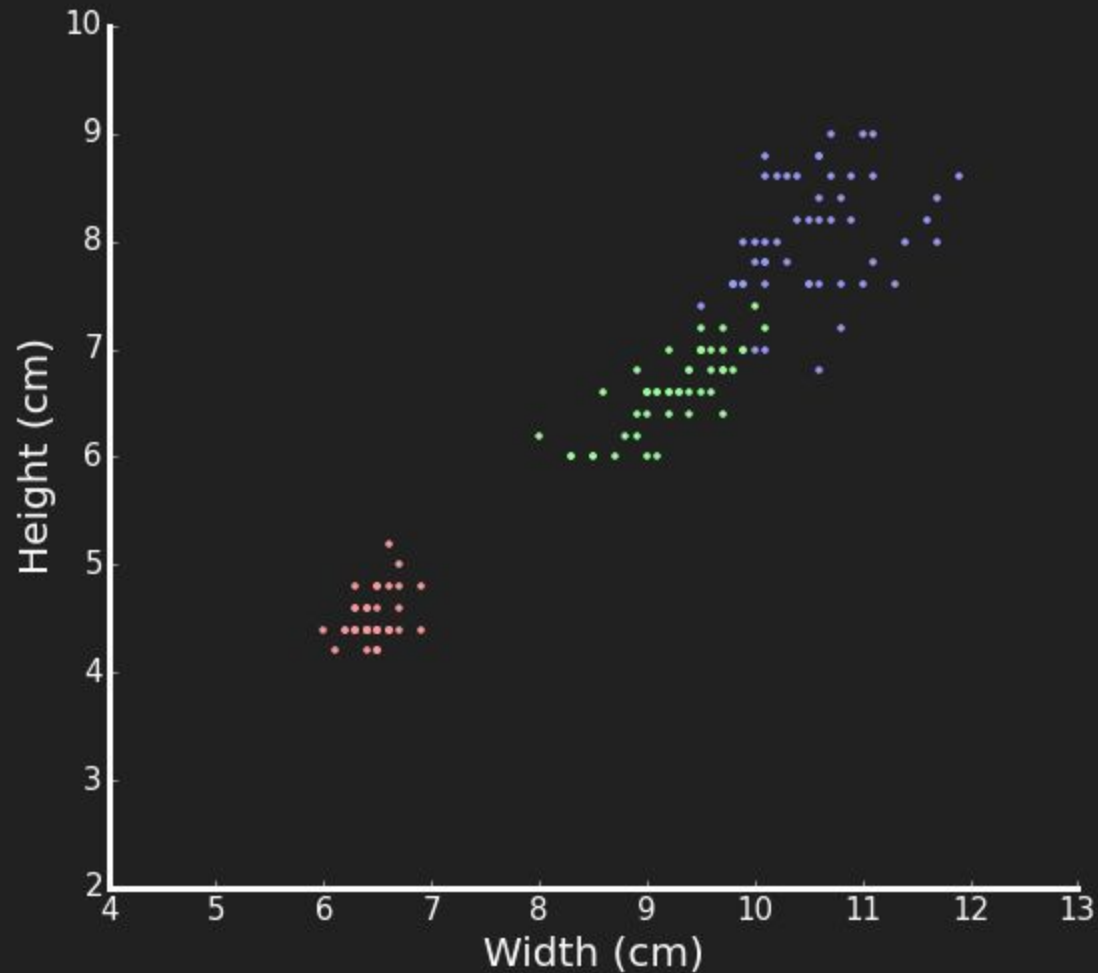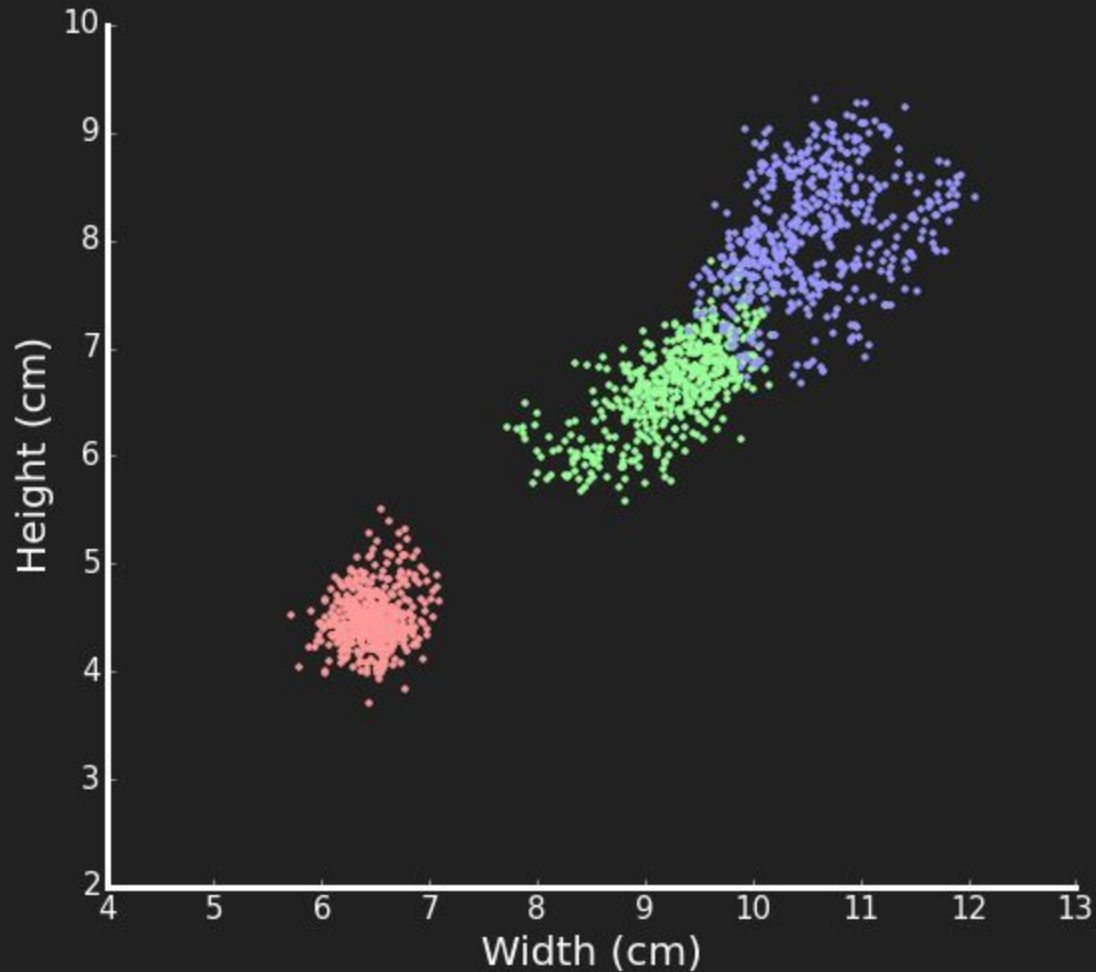
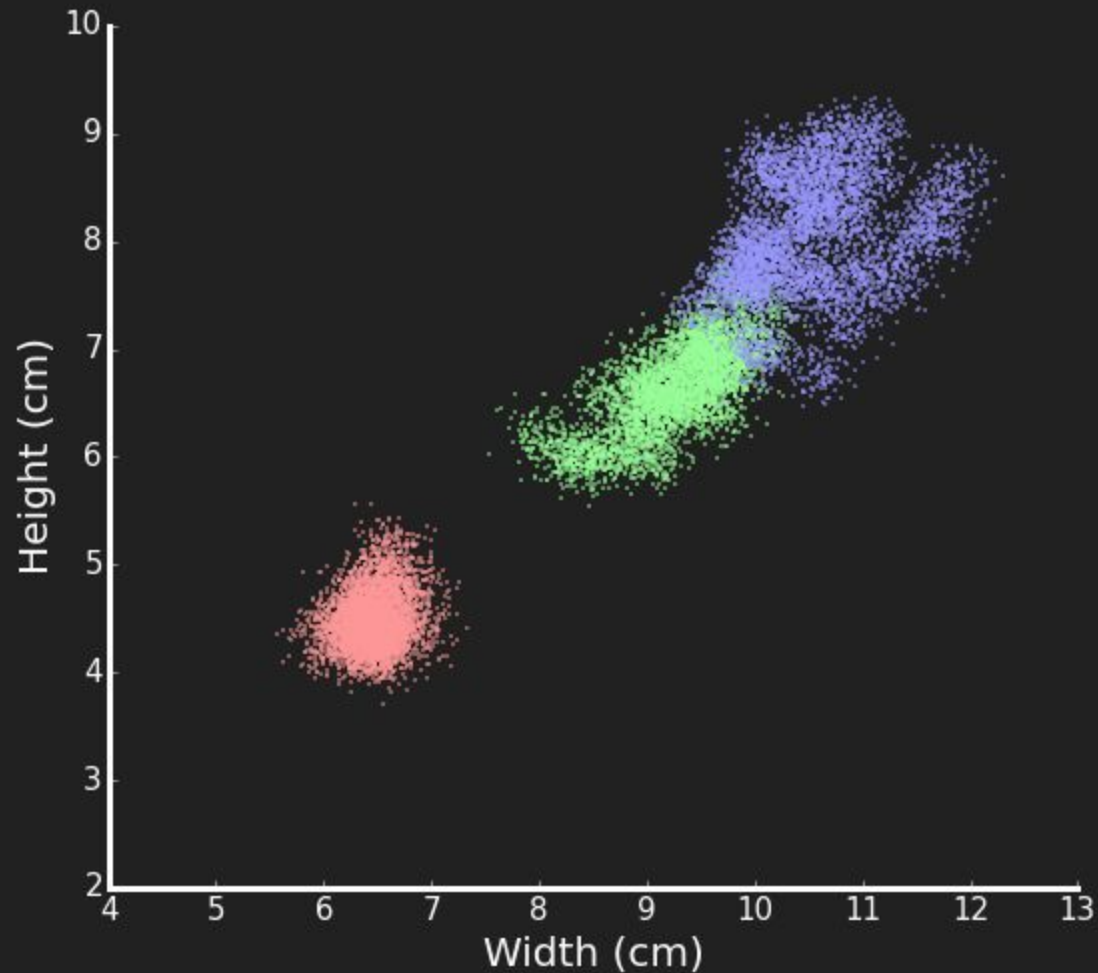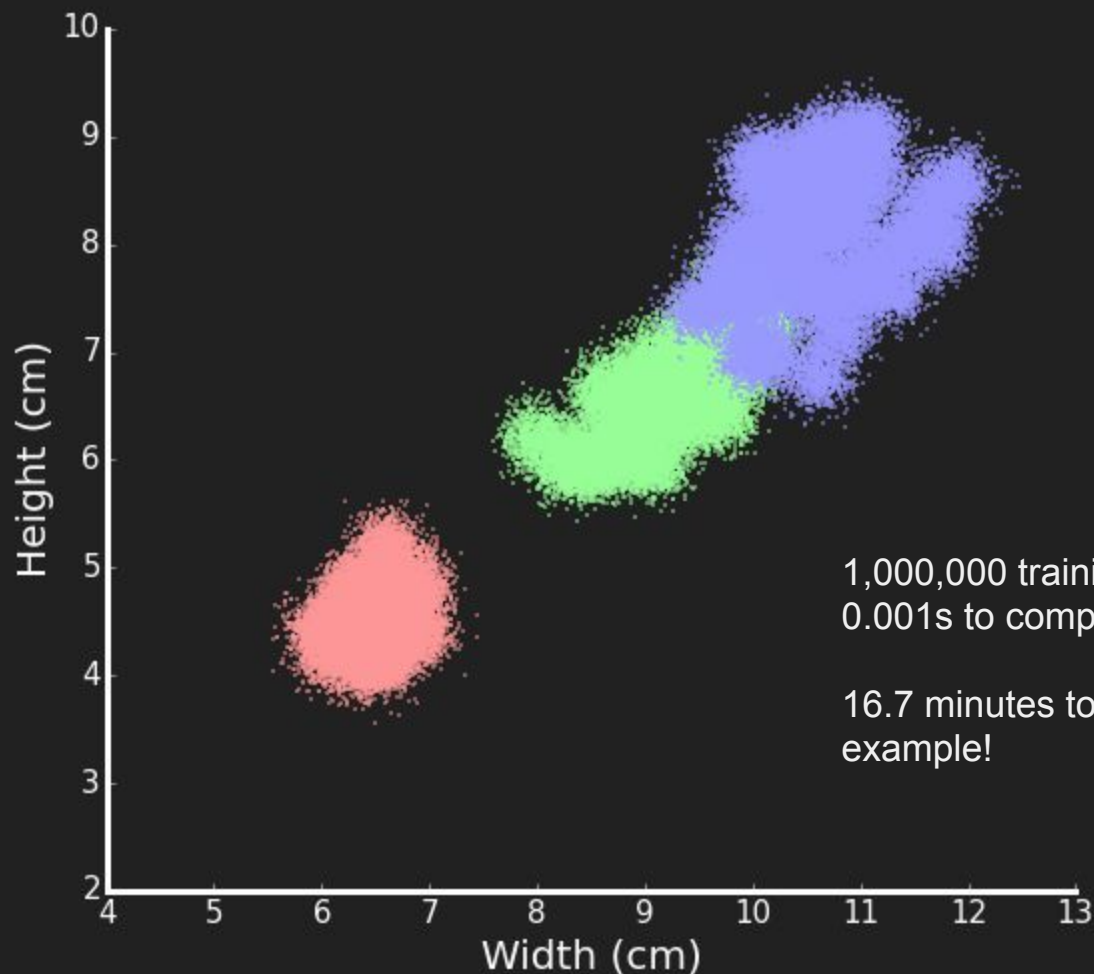# Problems with Nearest Neighbours #1: Overconfidence

Problems with Nearest Neighbours #2: Memory & speed

Problems with Nearest Neighbours #2: Memory & speed

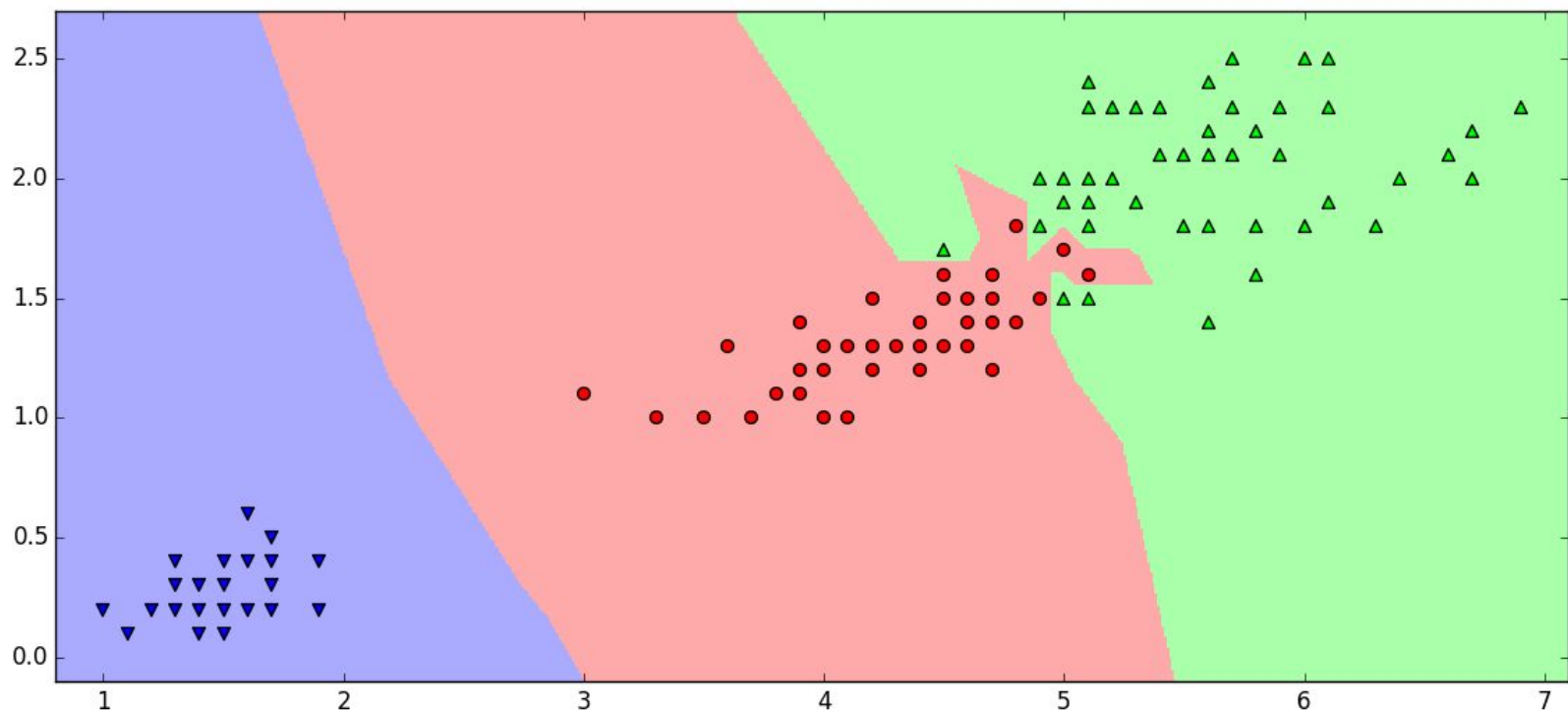# Problems with Nearest Neighbours #2: Memory & speed

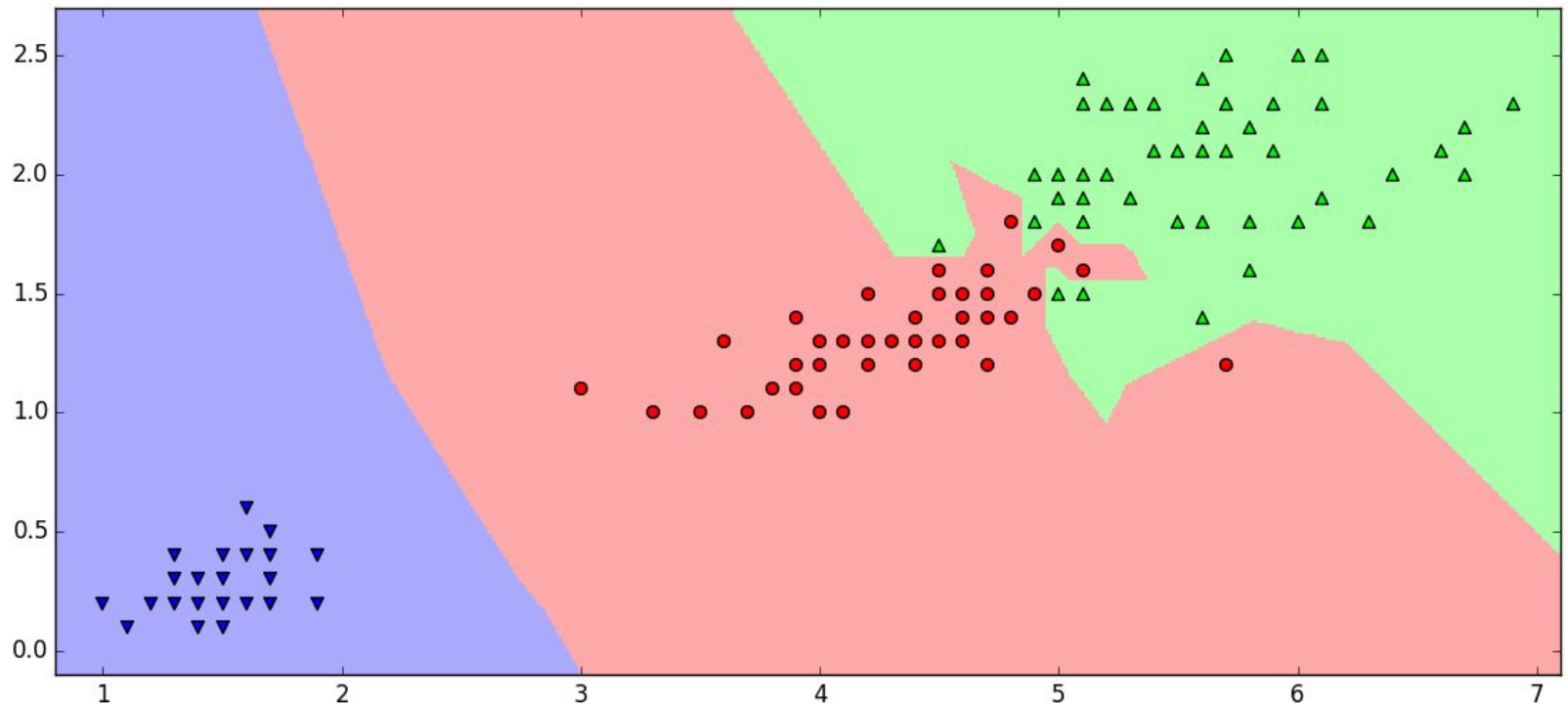# Problems with Nearest Neighbours #2: Memory & speed

1,000,000 training data
0.001s to compute each distance
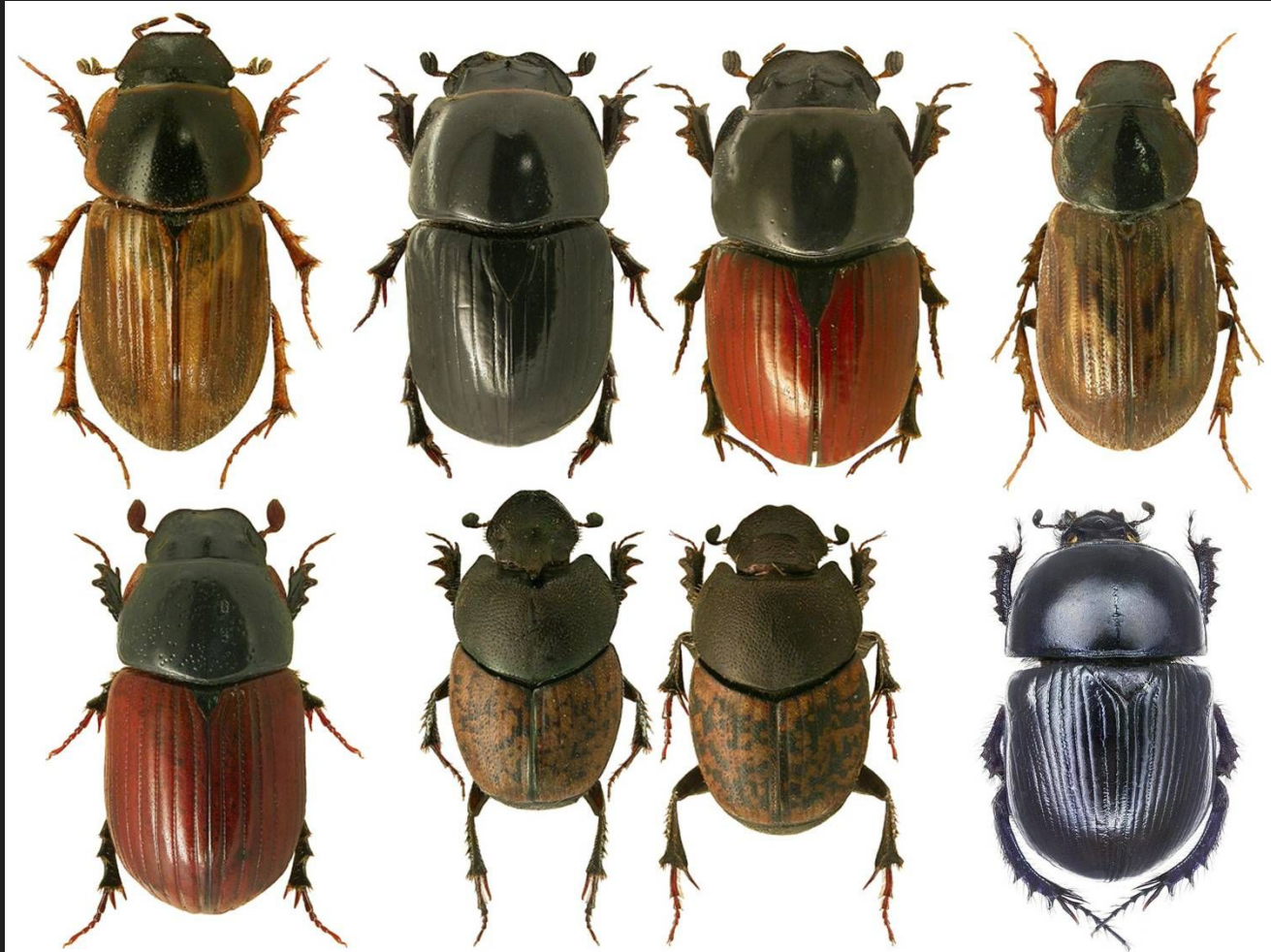
16.7 minutes to classify each test example!

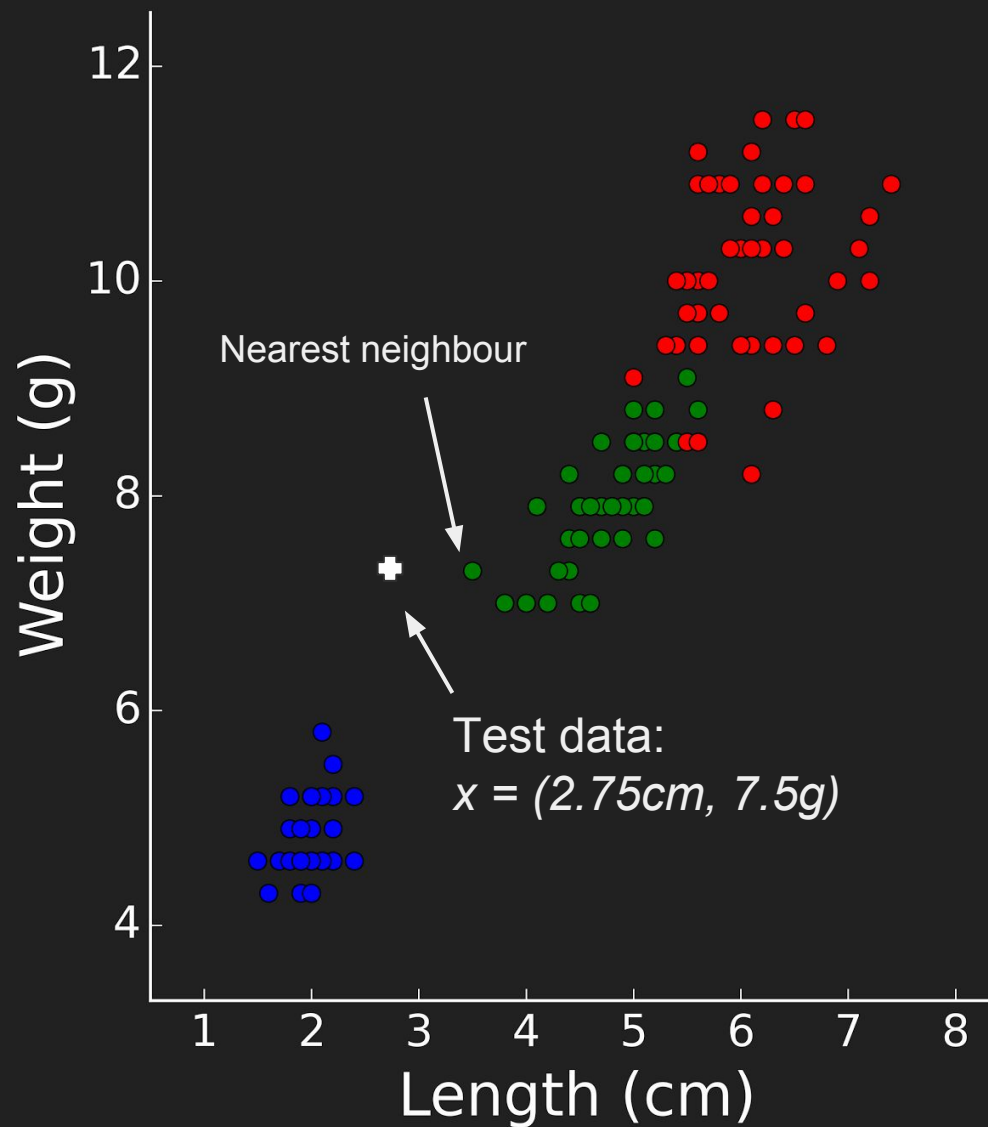# Problems with Nearest Neighbours #3: Noise

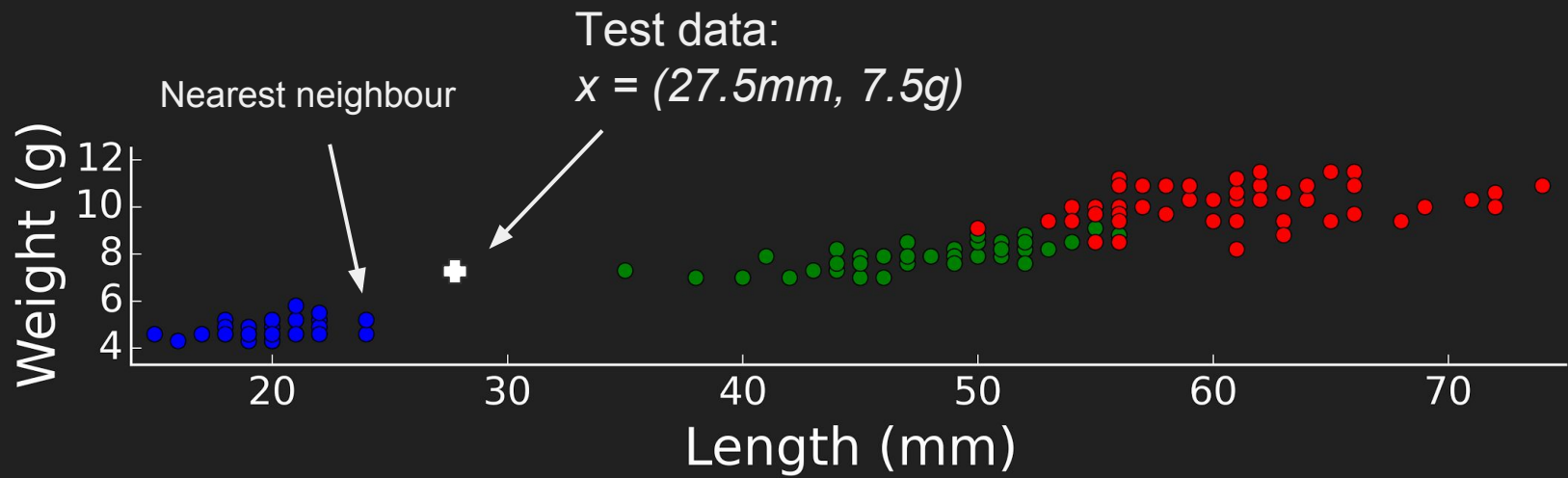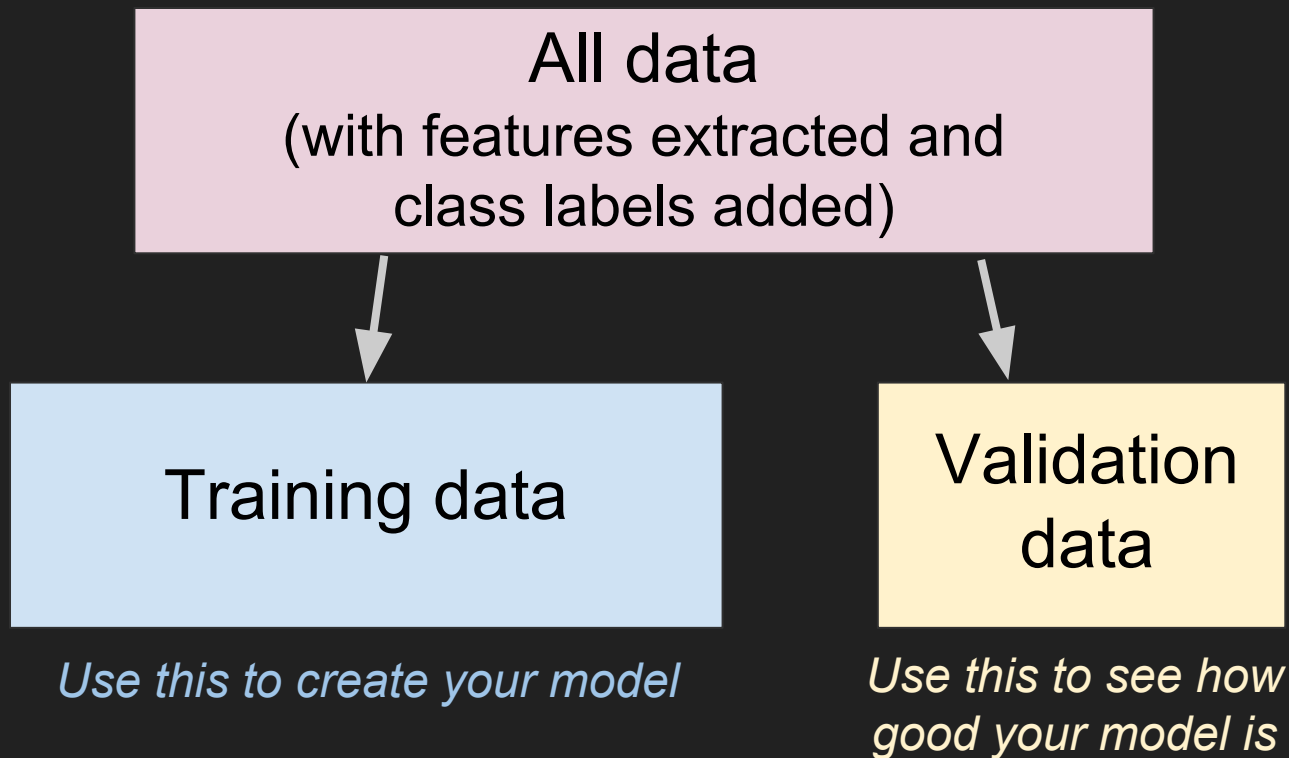# Problems with Nearest Neighbours #3: Noise

Problems with Nearest Neighbours #4: Scaling

Problems with Nearest Neighbours #4: Scaling

Nearest neighbour

Test data:
x = (2.75cm, 7.5g)

Weight (g)

Length (cm)

Problems with Nearest Neighbours #4: Scaling

Training / validation split

All data
(with features extracted and
class labels added)

Training data

Use this to create your model

Validation data

*Use this to see how
good your model is*

Training / validation split

All data

Training data
(75%)
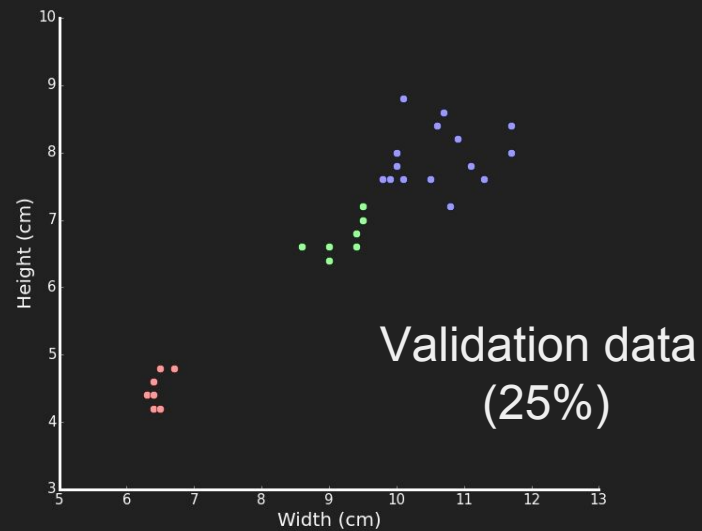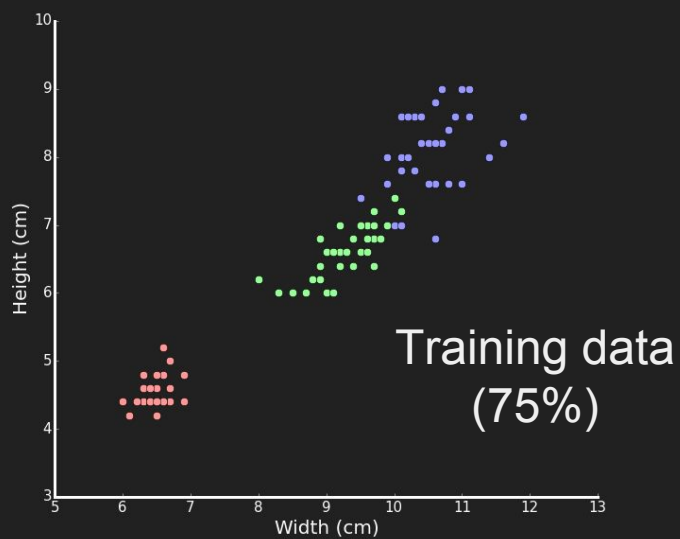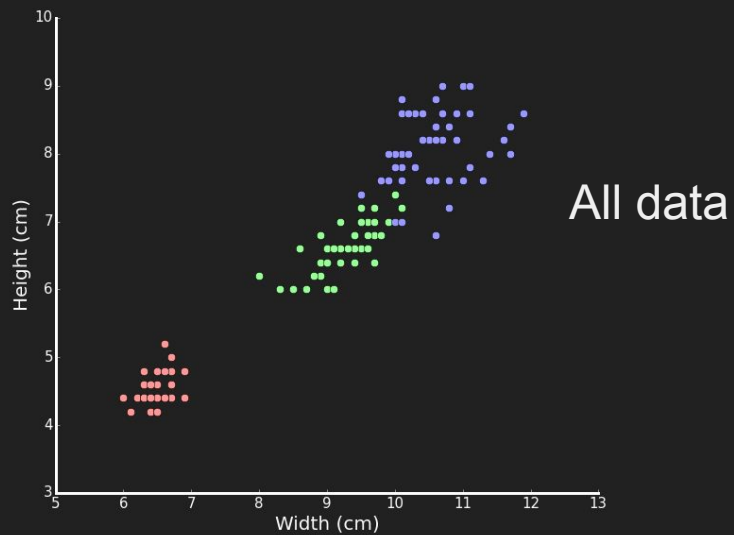
Validation data
(25%)

How good is your model?

The 'correct' answer

Ground truth
1
1
2
2
1
3
3
1
3
3

10 items in validation set

1 = polygonia c-album, 2 = maniola jurtina, 3 = pyronia tithonus

How good is your model?

- 10 butterflies in validation set, 6 were classified correctly
- Accuracy = 0.6 or 60%
- Error = 0.4 or 40%