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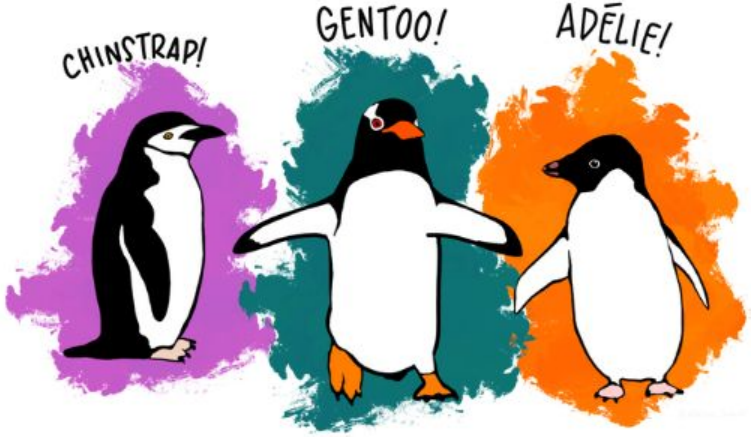
Introduction to Machine Learning

ChengCheng Tan
WTM Ambassador

Philippa Burgess
WTM Ambassador

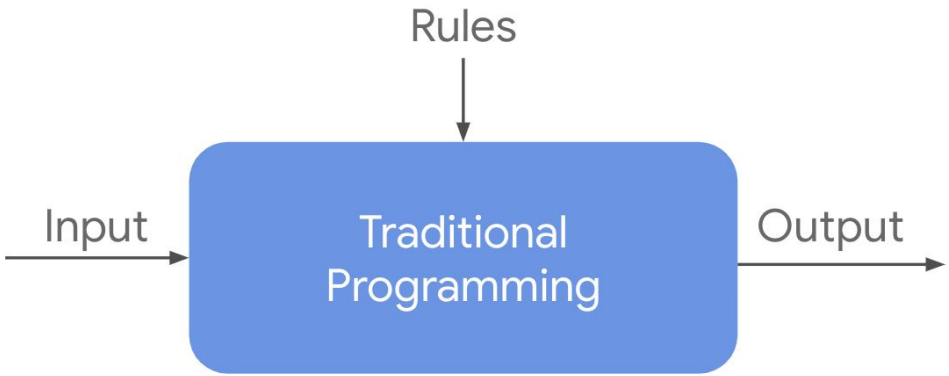


1. What is Machine Learning?
2. Data preparation
3. Model Training
4. Model Evaluation
5. Next steps... and more!

What is Machine Learning (ML)?

Traditional Programming

$$T_F = T_C * \frac{9}{5} + 32$$



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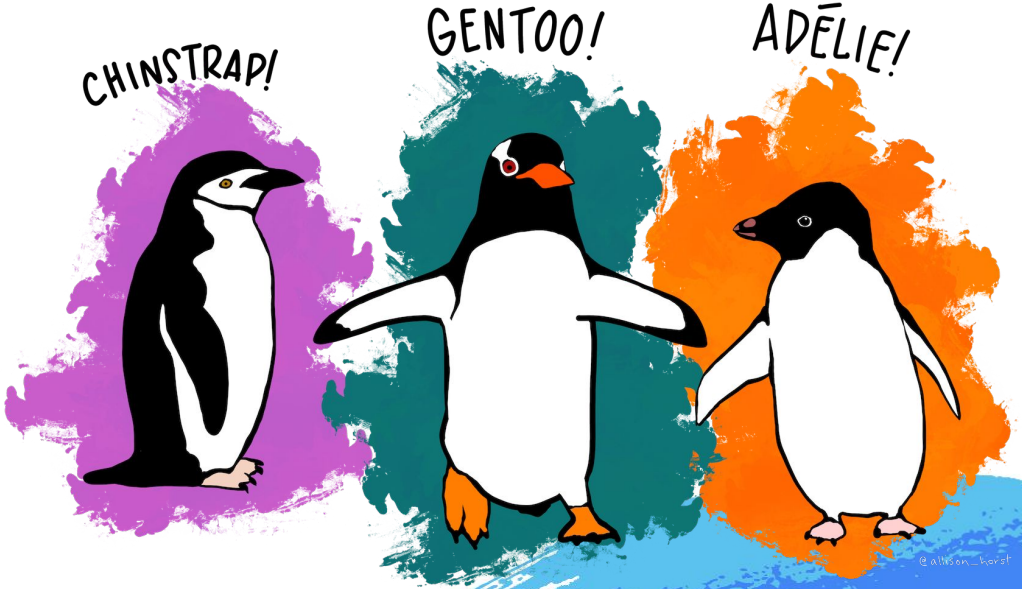
Machine Learning

$$\left\{ \begin{array}{c} 0^oC = 32^oF \\ 10^oC = 50^oF \\ 40^oC = 104^oF \\ \dots \end{array} \right\}$$

Examples

Data



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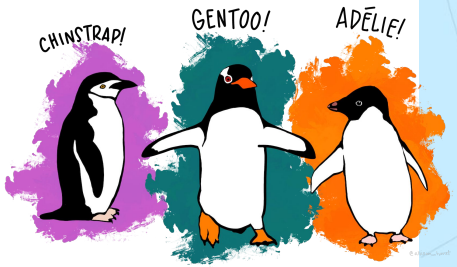
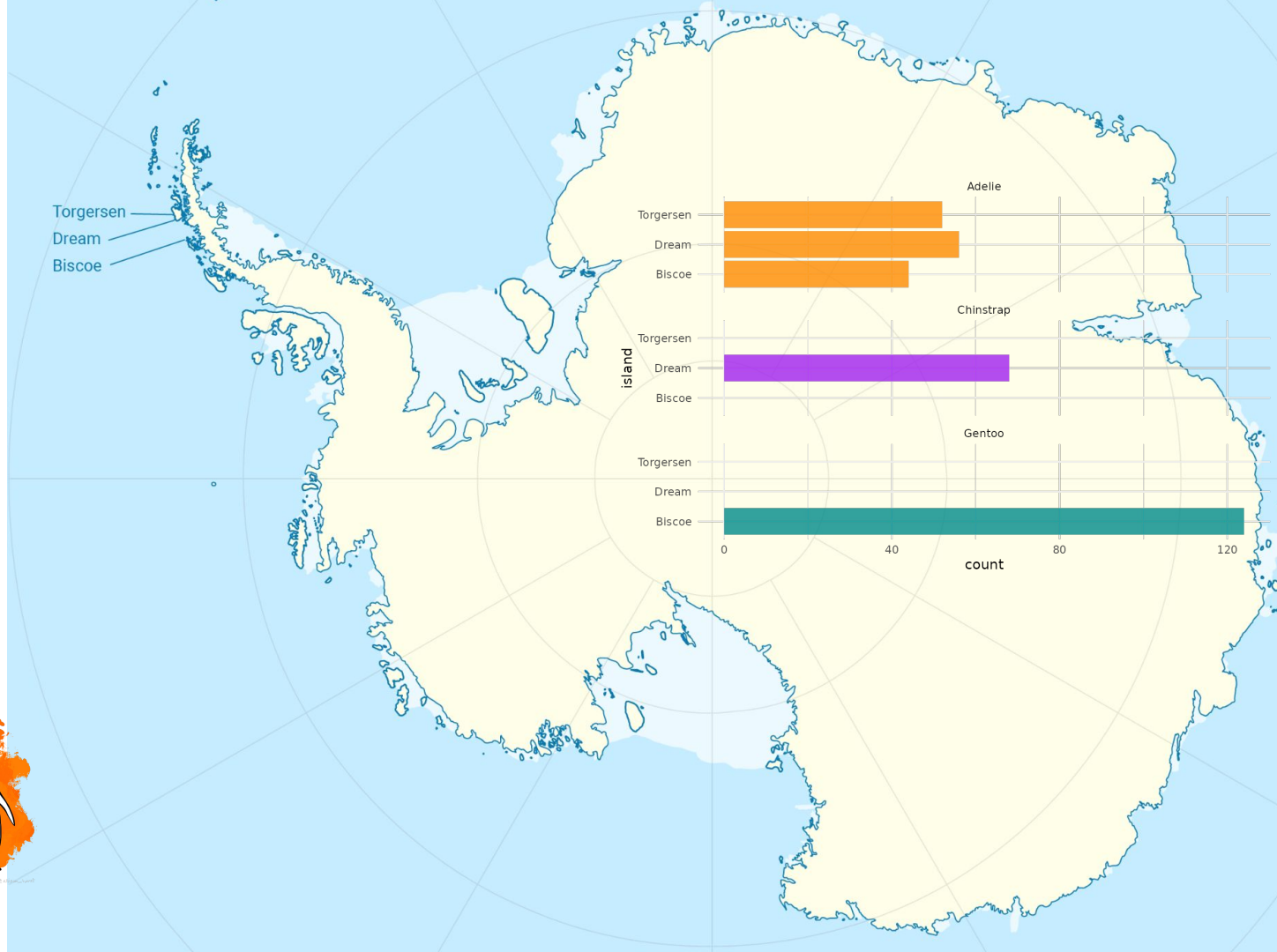
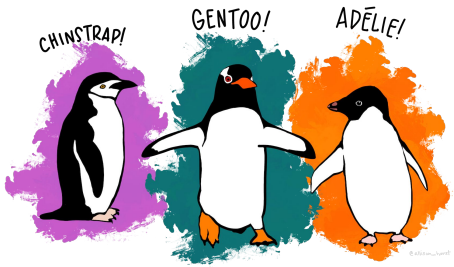
Palmer Penguins

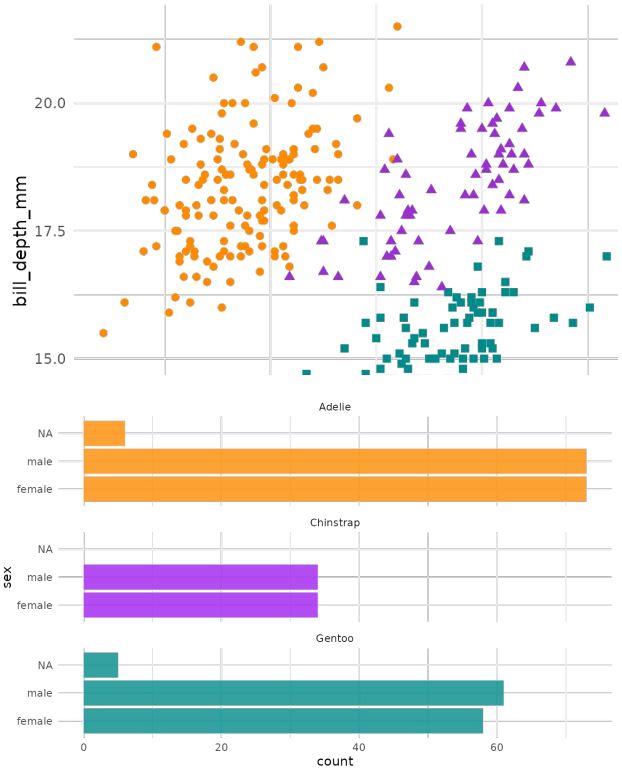


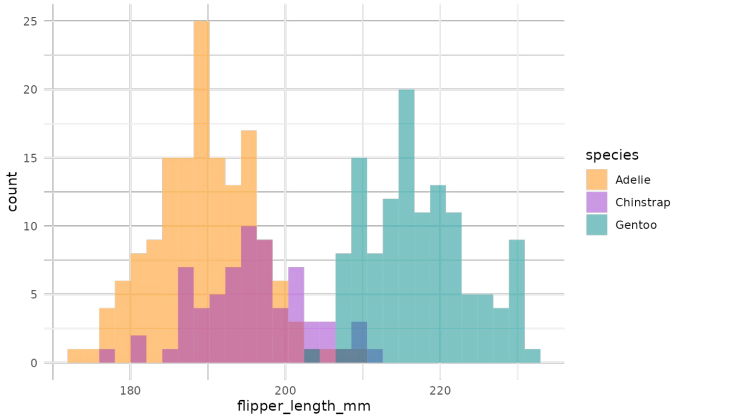


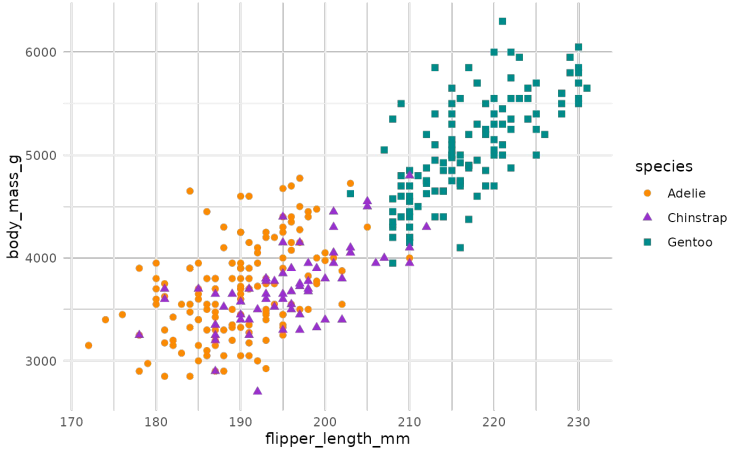
Data Exploration

- bill_depth
- bill_length
- flipper_length
- body_mass
- sex
- island



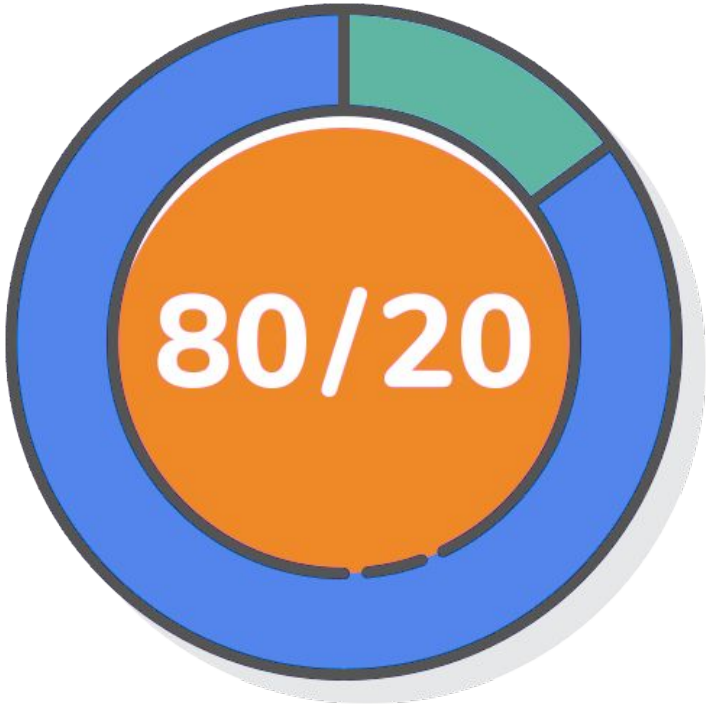






Data Preparation

- Input features: characteristics
- Output labels: target classes
- Training & testing split



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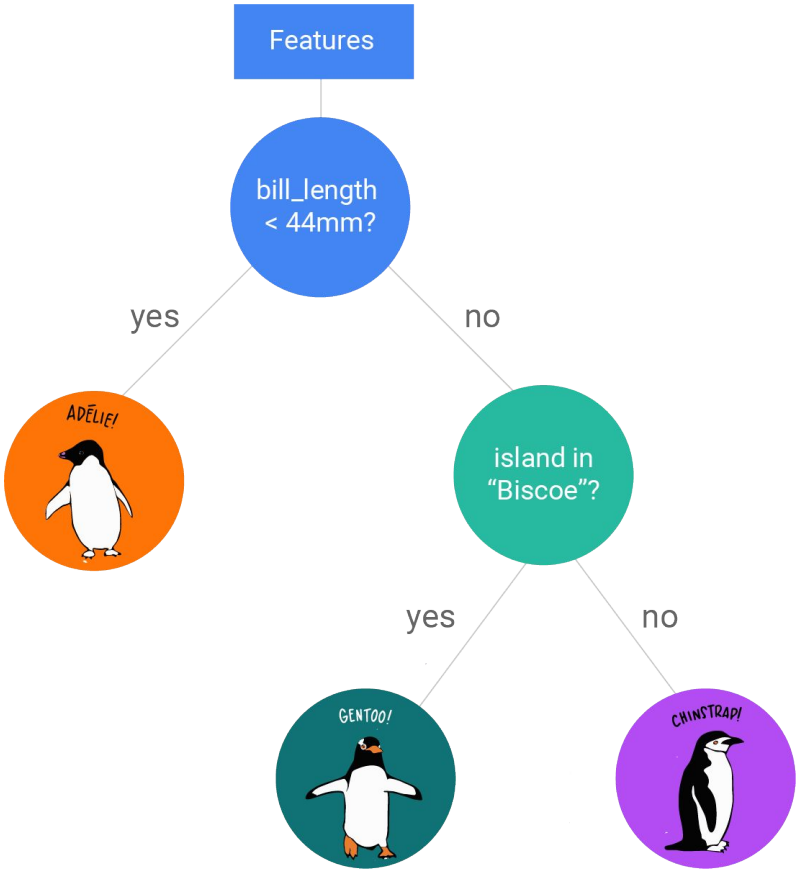
ML Models & Algorithms

Decision Tree



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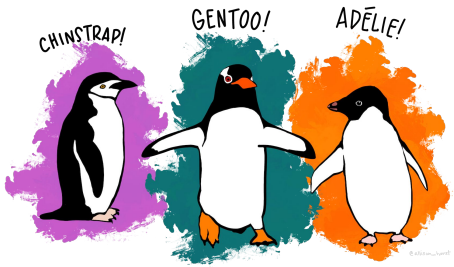

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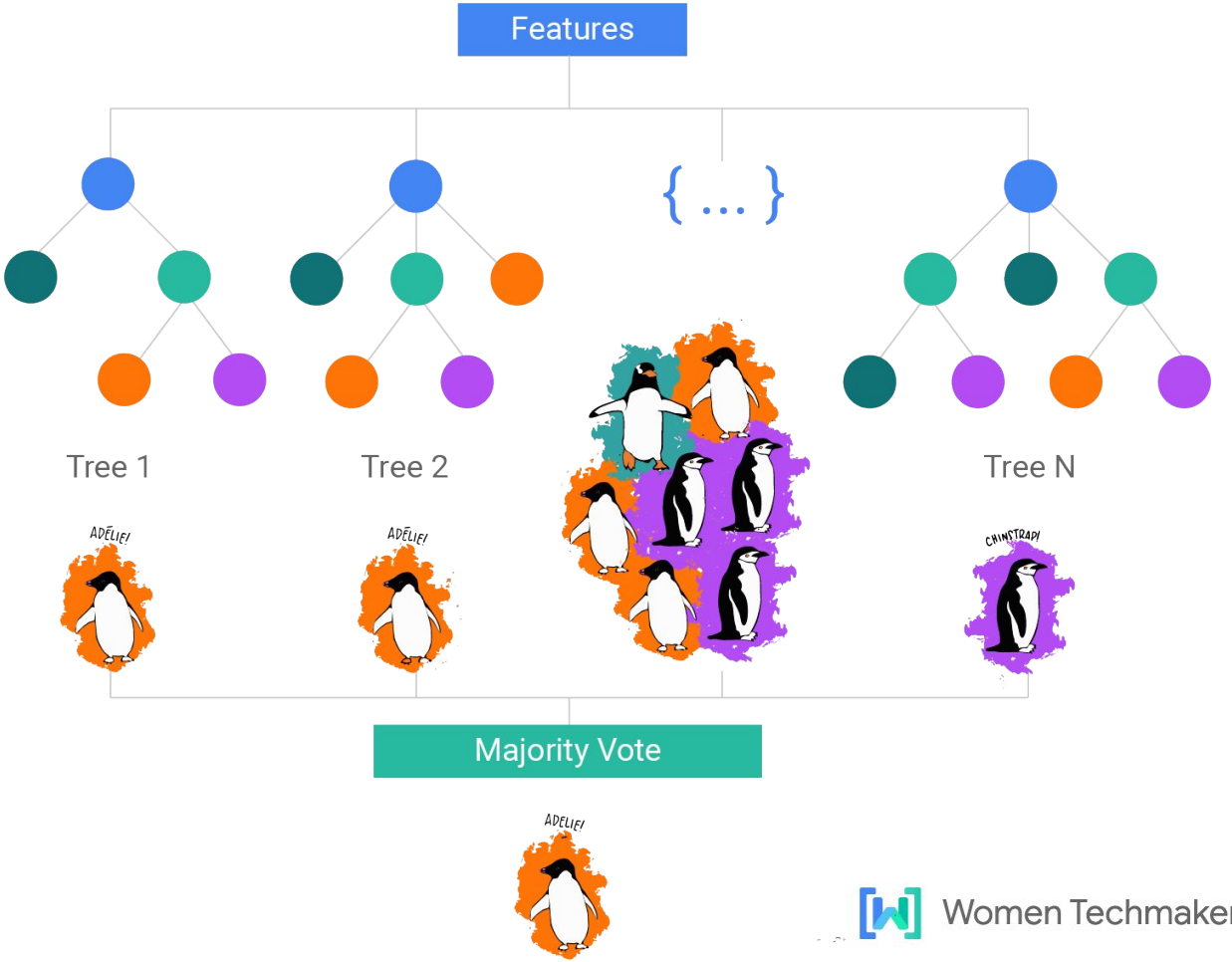
Decision Forest



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https://bit.ly/WTM23_introML

Google Colab Notebook

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1. Setting up the environment

2. Get the Data

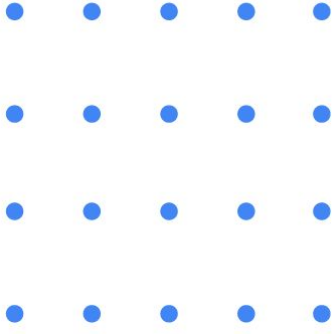
Load the dataset

2. Get the Data

Explore the data

2. Get the Data

Data cleaning
Training vs Testing



3. Train the Model

4. Evaluate the Model

4. Evaluate the Model

Explore decision tree plot

4. Evaluate the Model

Training logs
Tensorboard

5. What’s next?

5. More FREE resources!!

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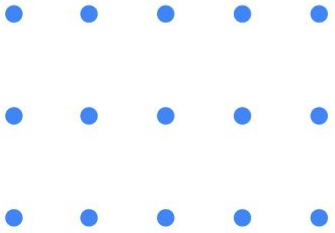
The best way of learning about anything is by doing...

You don't learn to walk by following rules.
You learn by doing, and by falling over.

— Richard Branson



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