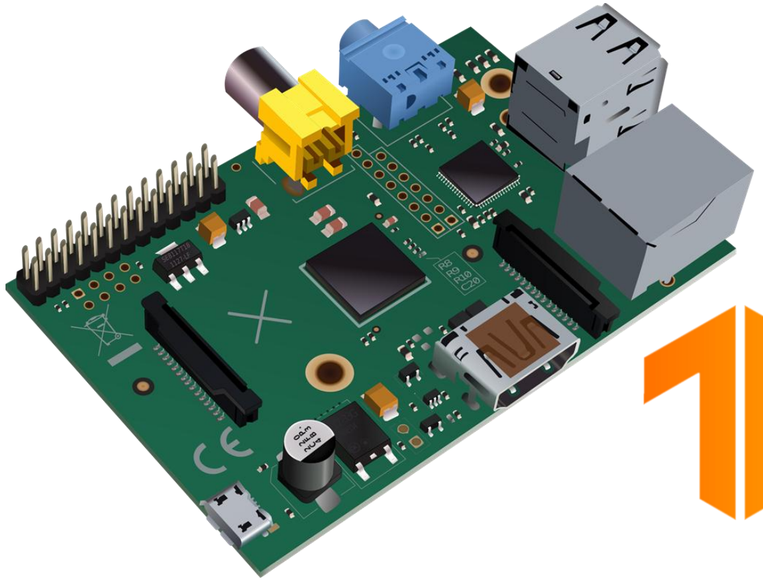
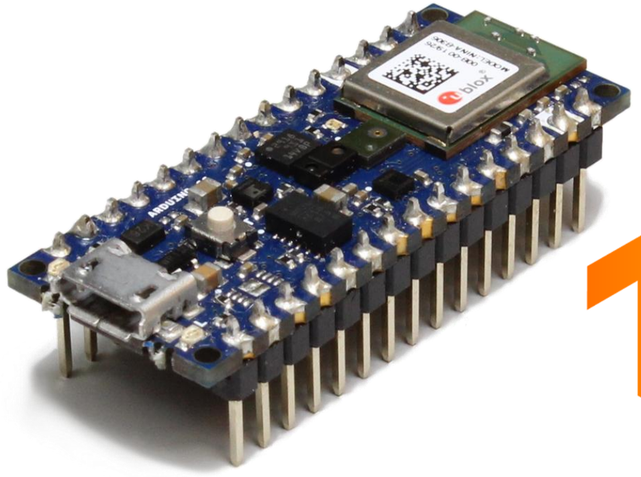


Single Board Computer

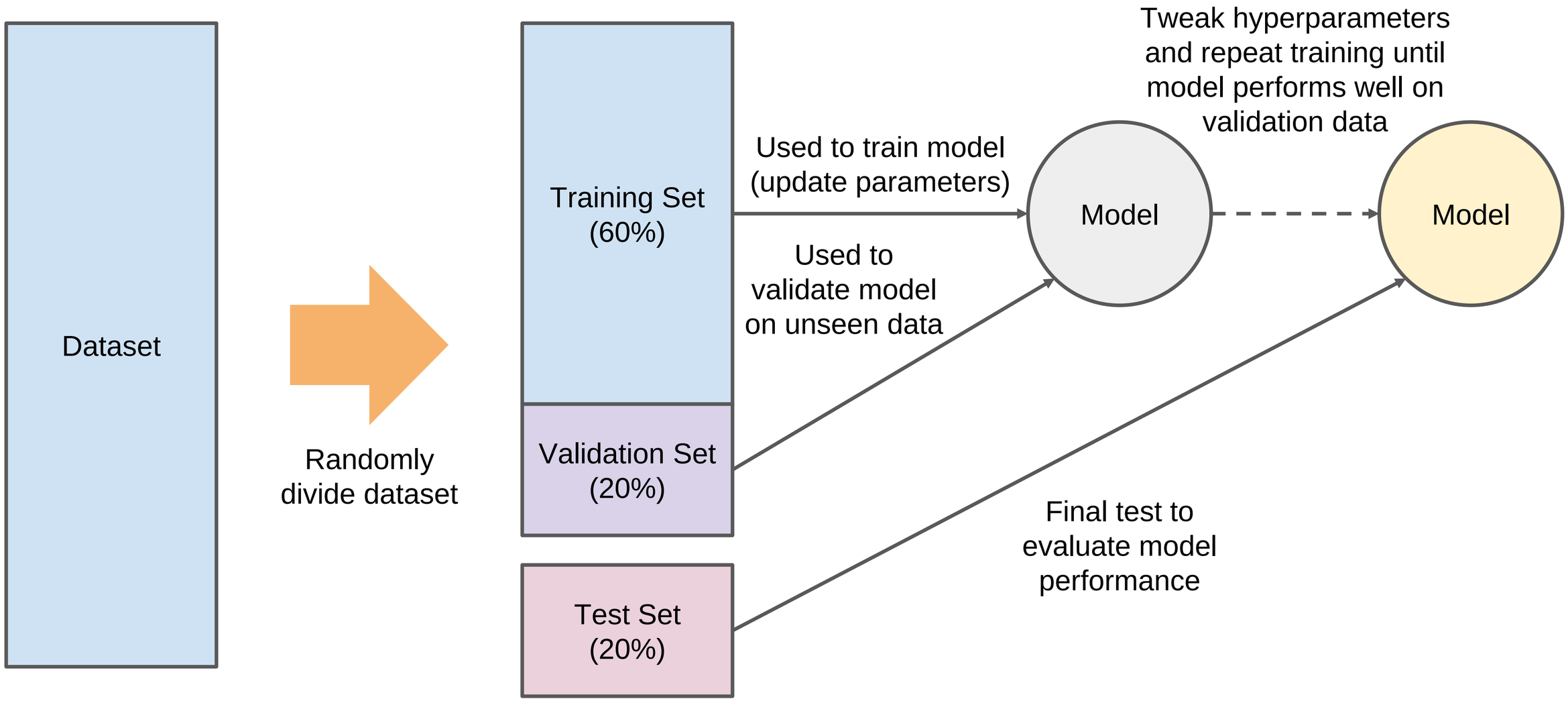
- More powerful (faster processor, more memory)
- Runs full, general purpose operating system (OS)
- Can provide full command line or graphical user interface
- Requires more power



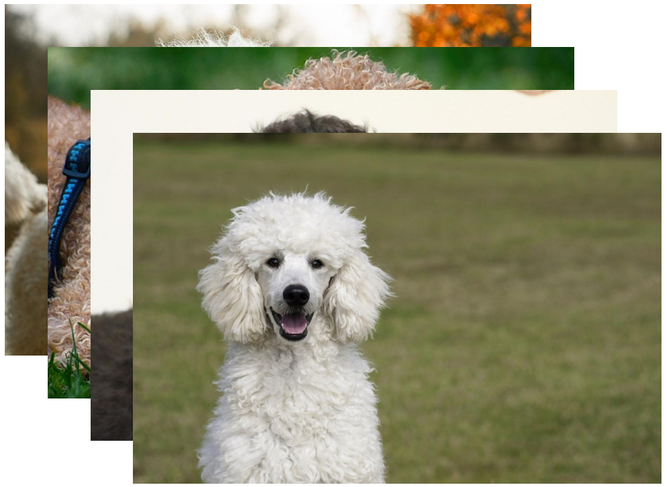
Microcontroller

- Less powerful
- Bare-metal (superloop) or real-time operating system (RTOS)
- Limited or no user interface
- Requires less power

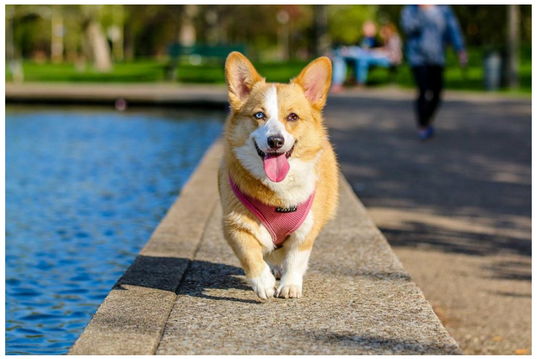
Holdout Method



Think about your data!



Training Data



Test Data

Train

Test

Model

Dog?

Feature Example

Acceleration (m/s^2)

x	-6.8	-5.6	-4.6	-4.1	-3.8	...
y	-0.1	0.2	0.7	0.9	0.7	...
z	10.4	10.3	10.2	10.1	9.6	...

375 raw values

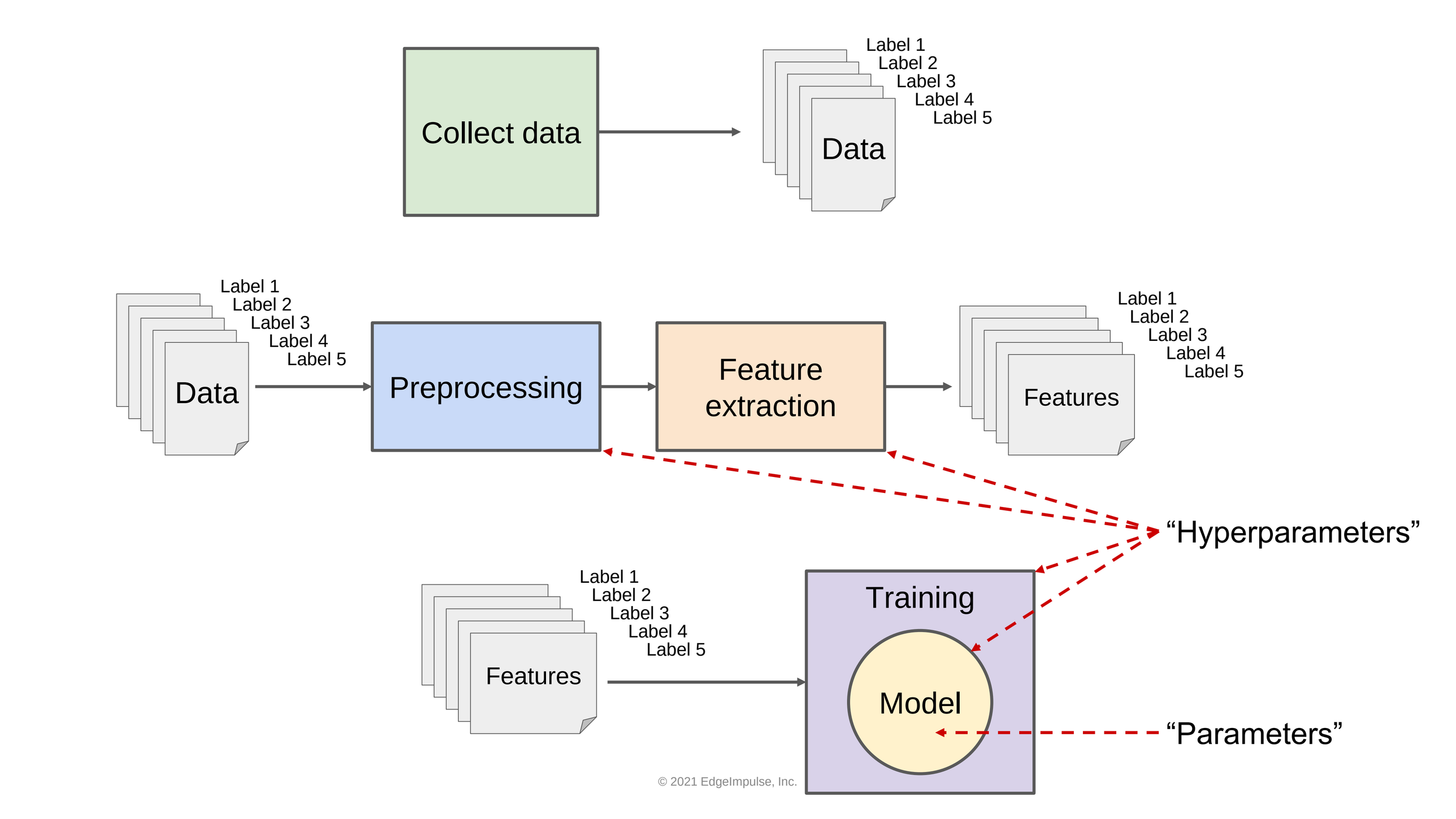
Feature extraction:
RMS and Power Spectral Density (PSD)

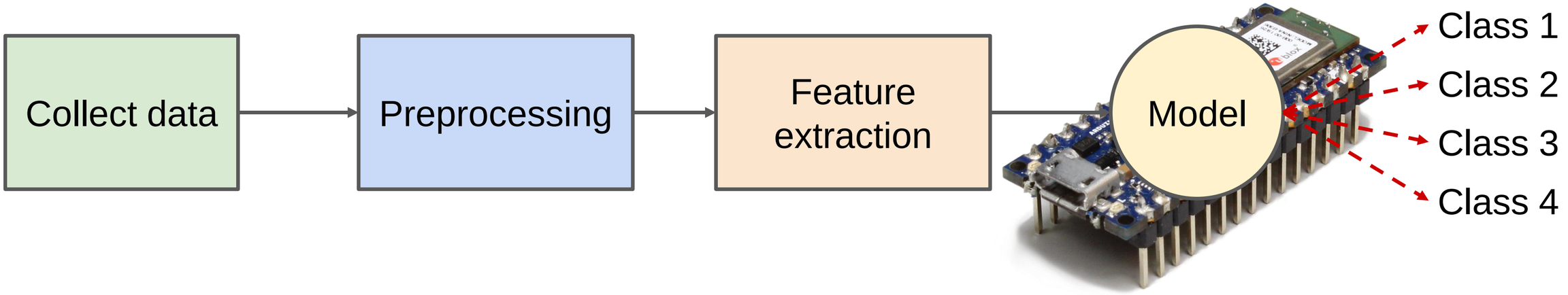
11 features per axis: RMS, 3x peak amplitudes from PSD, 3x peak frequencies from PSD, 4x spectral bins

33x features

Model

- Left-right
- Up-down
- Circle
- Idle





Inference: using the machine learning model to make predictions on unseen data in the wild