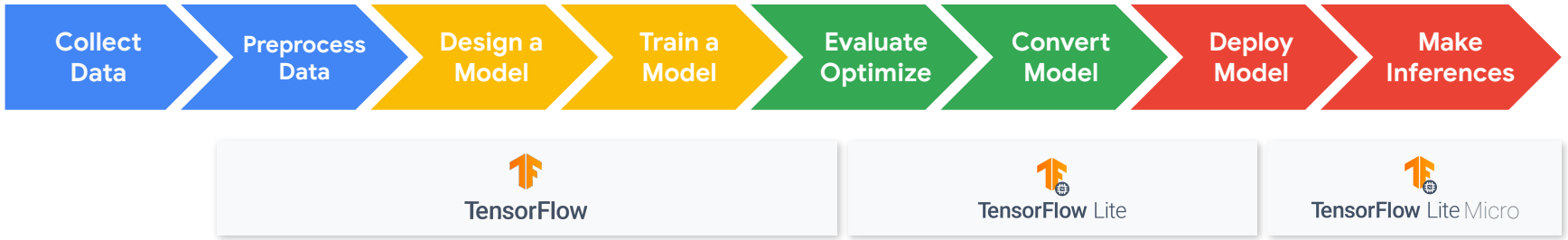
KWS Application Architecture

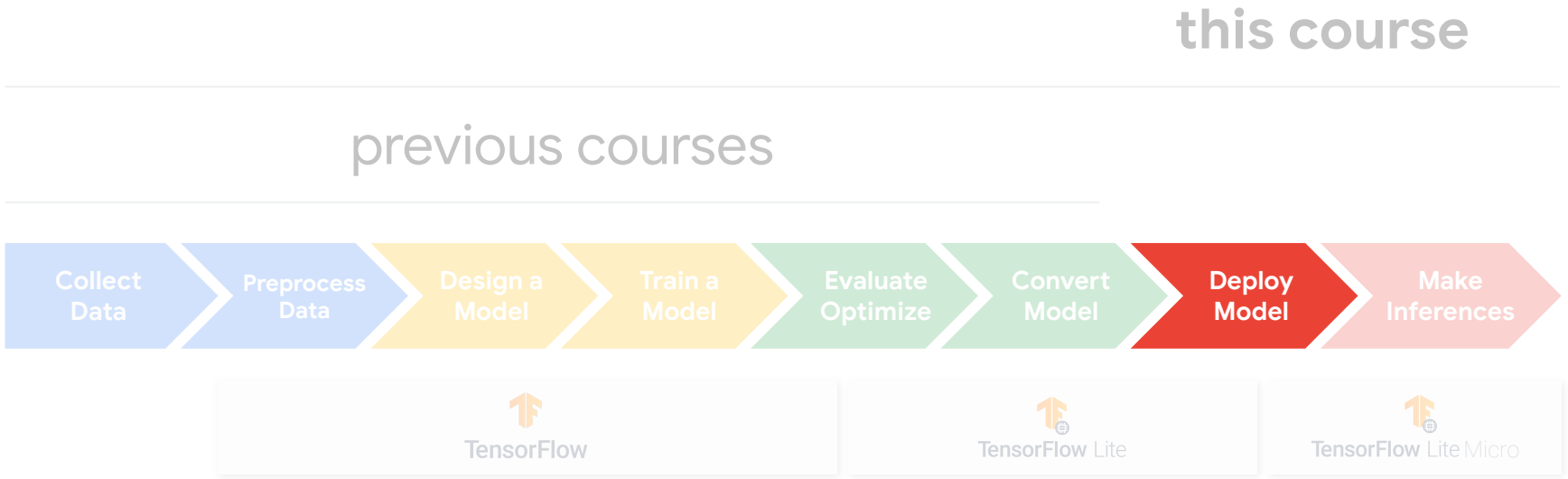
ML Workflow

this course

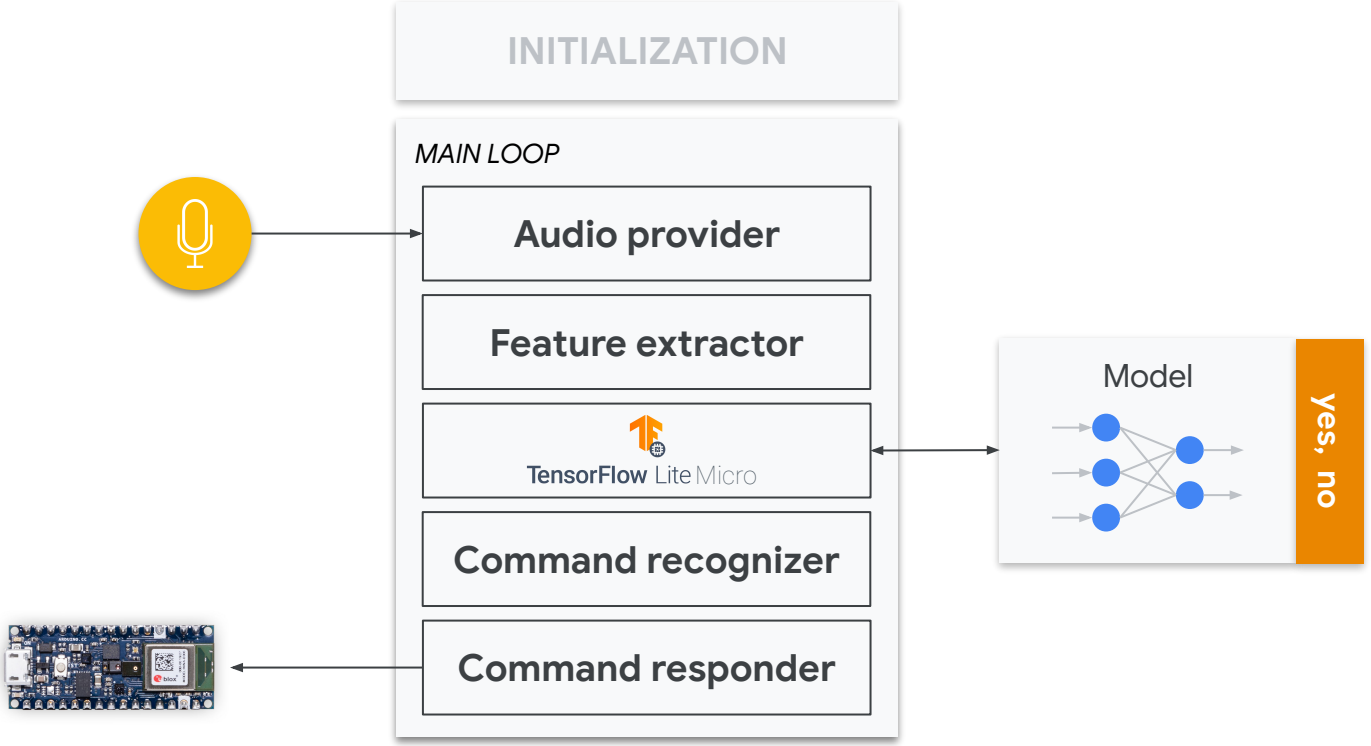
previous courses



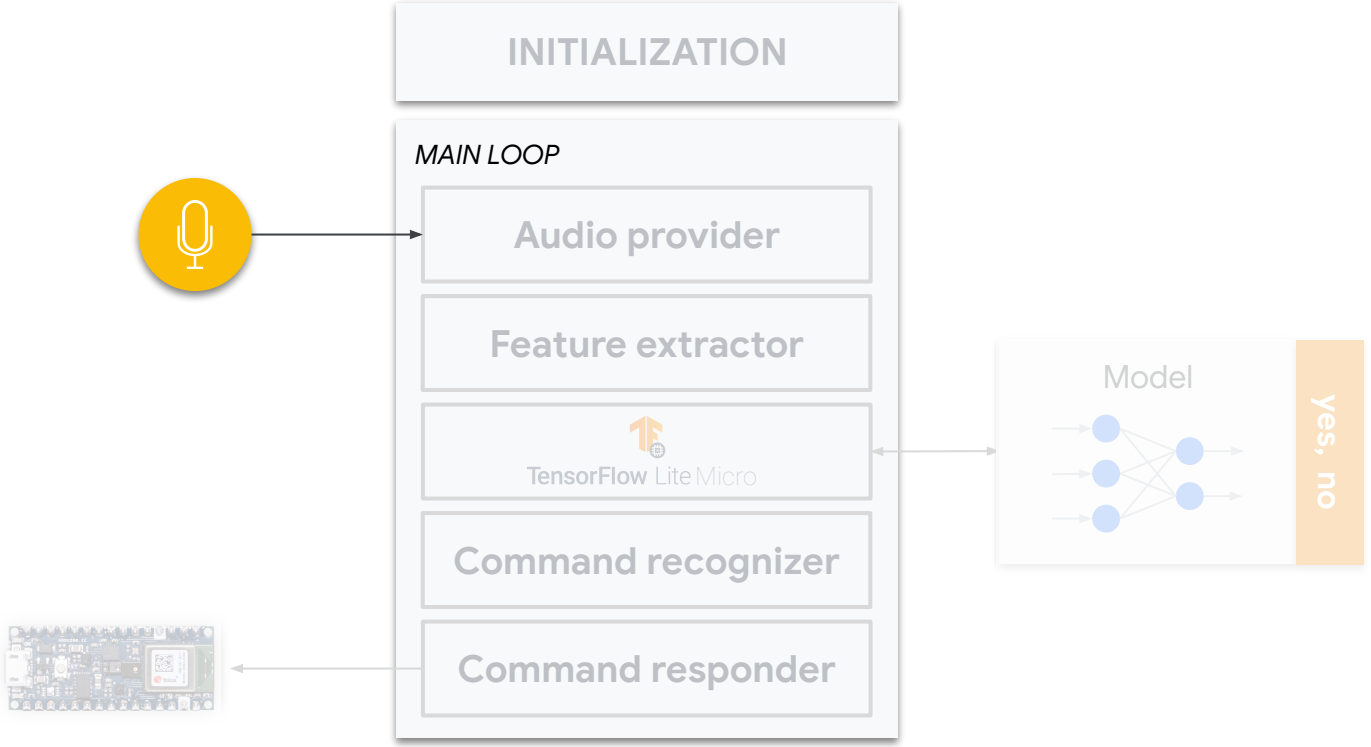
ML Workflow

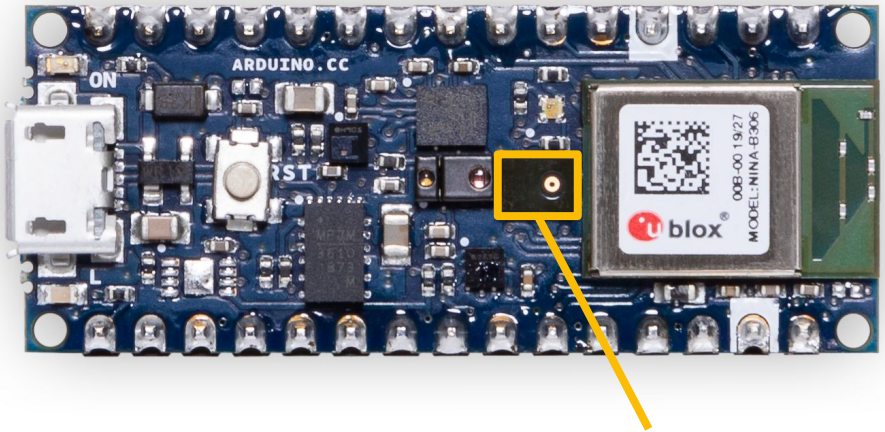

this course
previous courses
Collect Data
Preprocess Data
Design a Model
Train a Model
Evaluate Optimize
Convert Model
Deploy Model
Make Inferences
TensorFlow
TensorFlow Lite
TensorFlow Lite Micro

Keyword Spotting **Components**

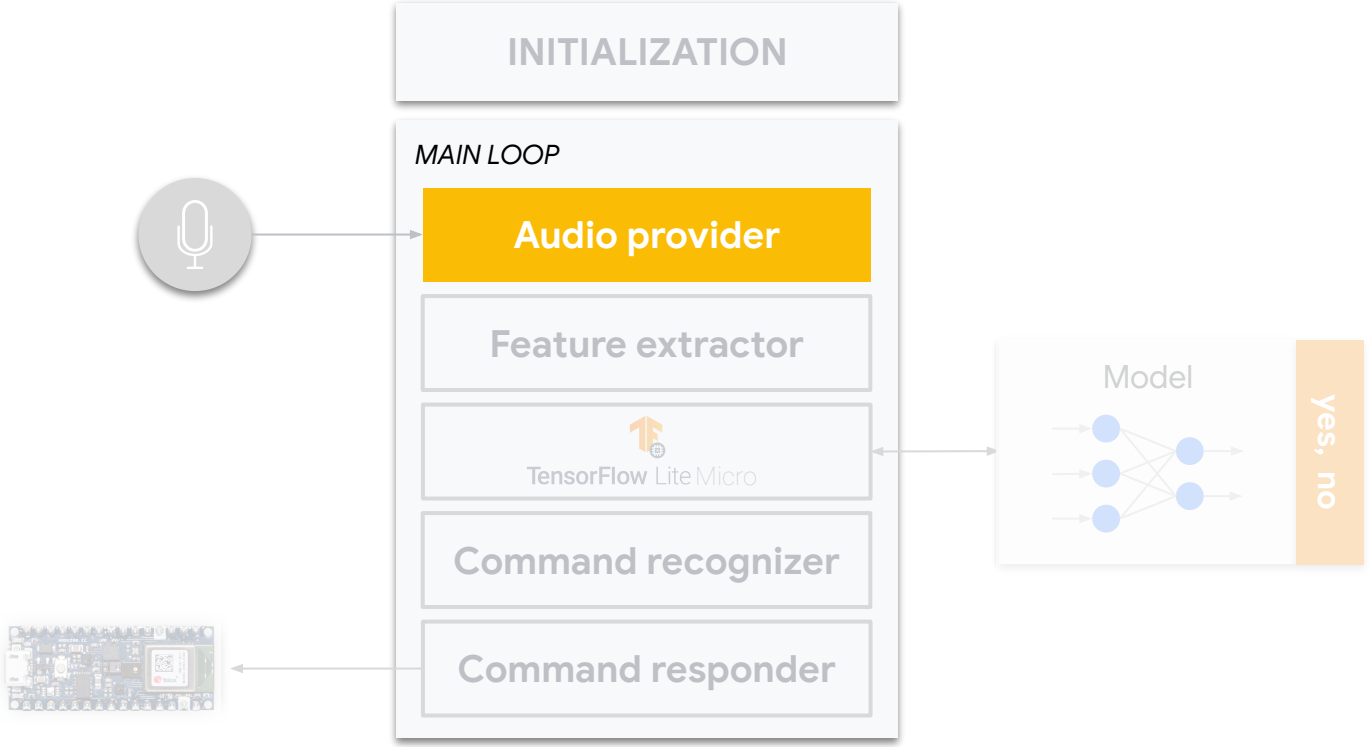


Device **Microphone**

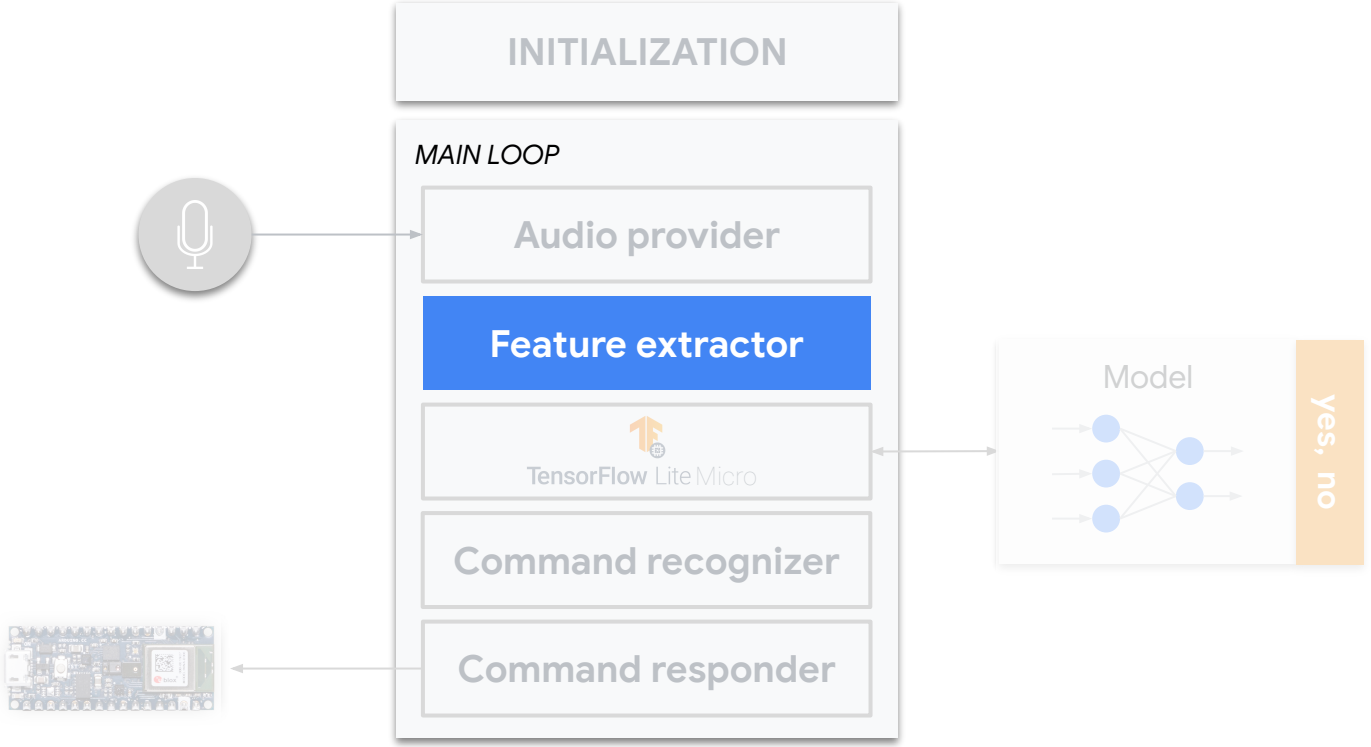


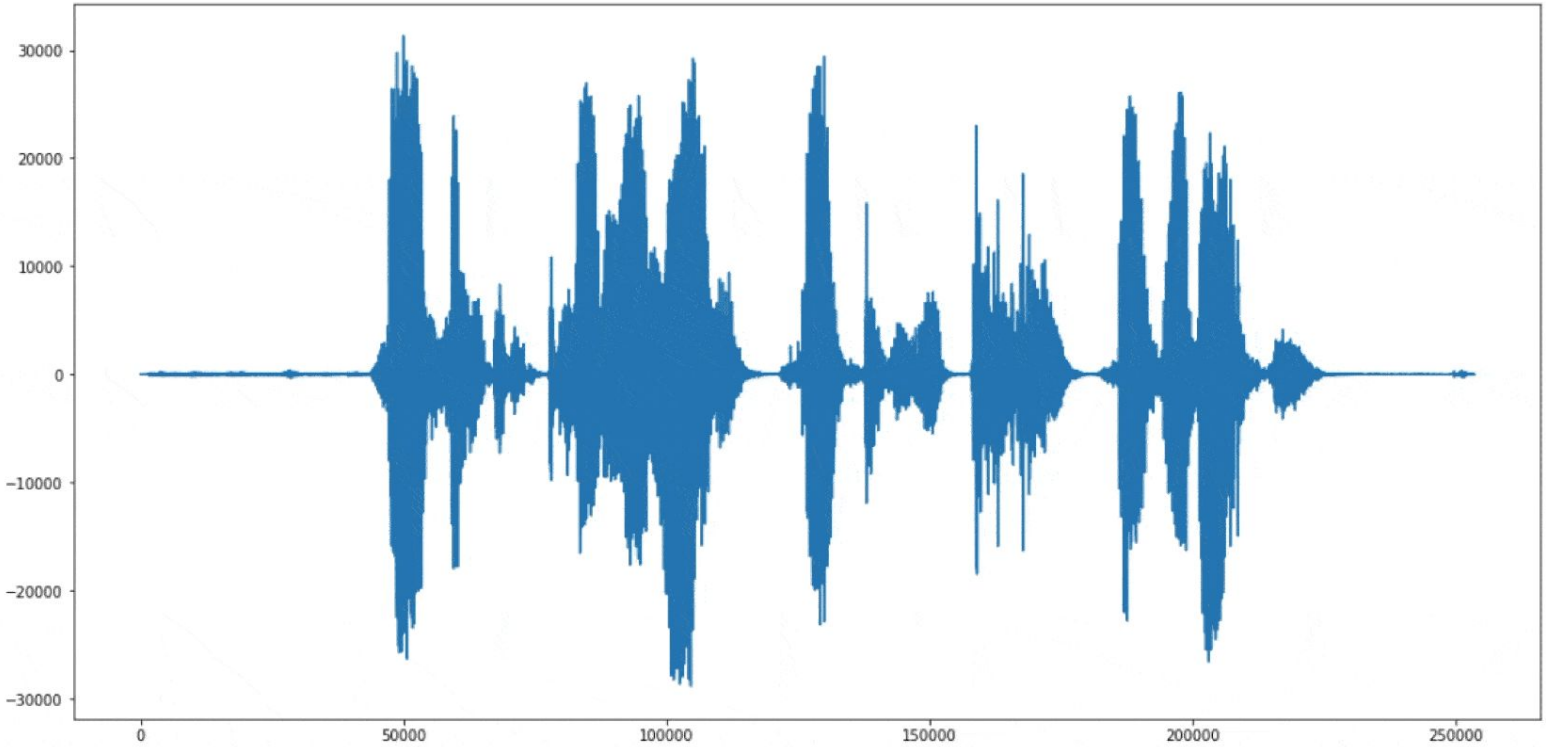

ARDUINO.CC
ON
RST
blox
MODEL:NINA-B306
Microphone

Audio **Provider**

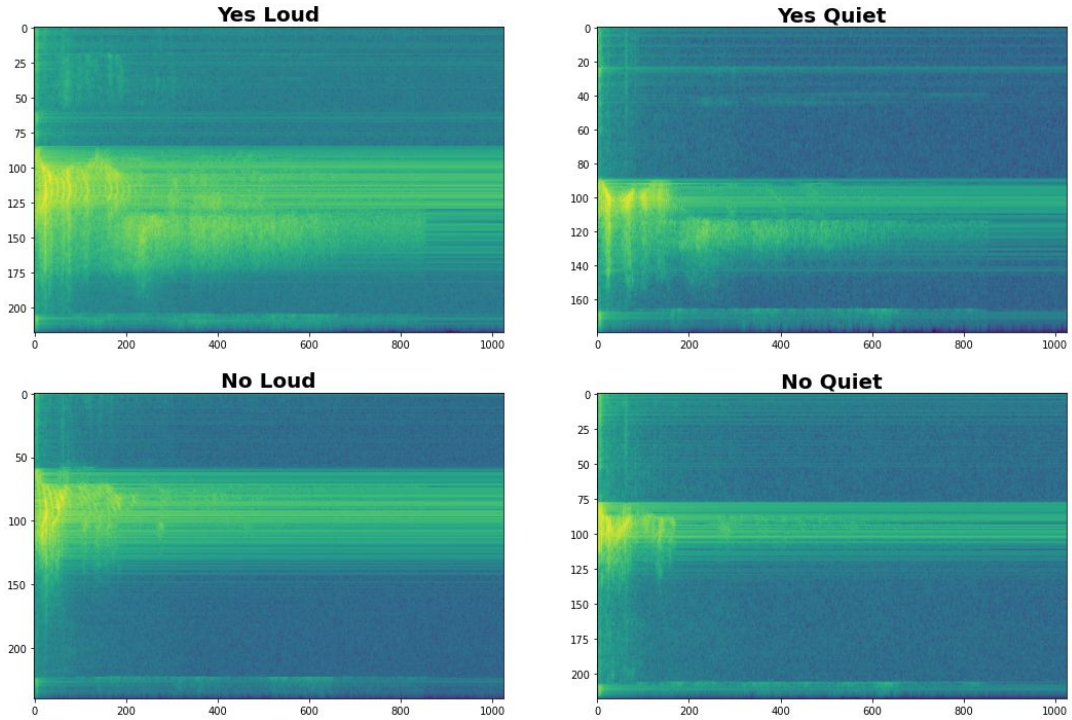


Feature **Extractor**

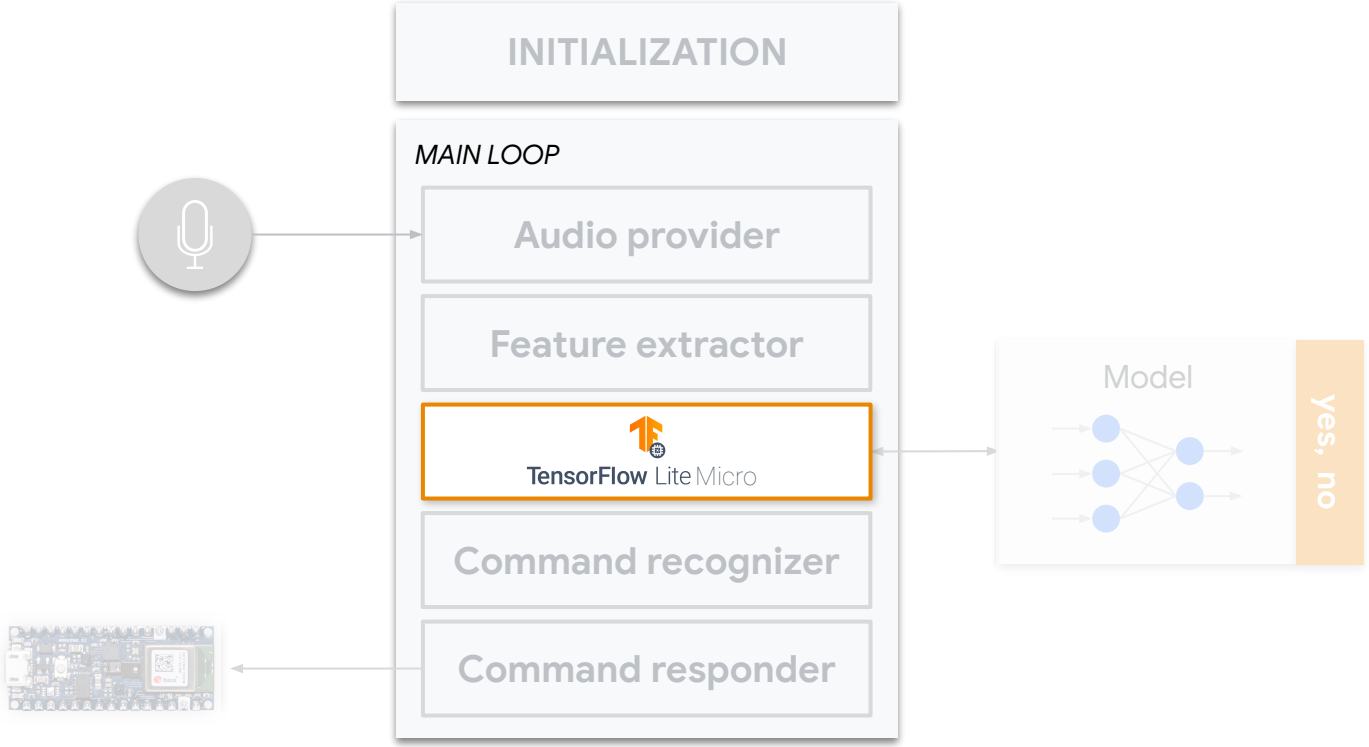



30000
20000
10000
0
−10000
−20000
−30000
0
50000
100000
150000
200000
250000

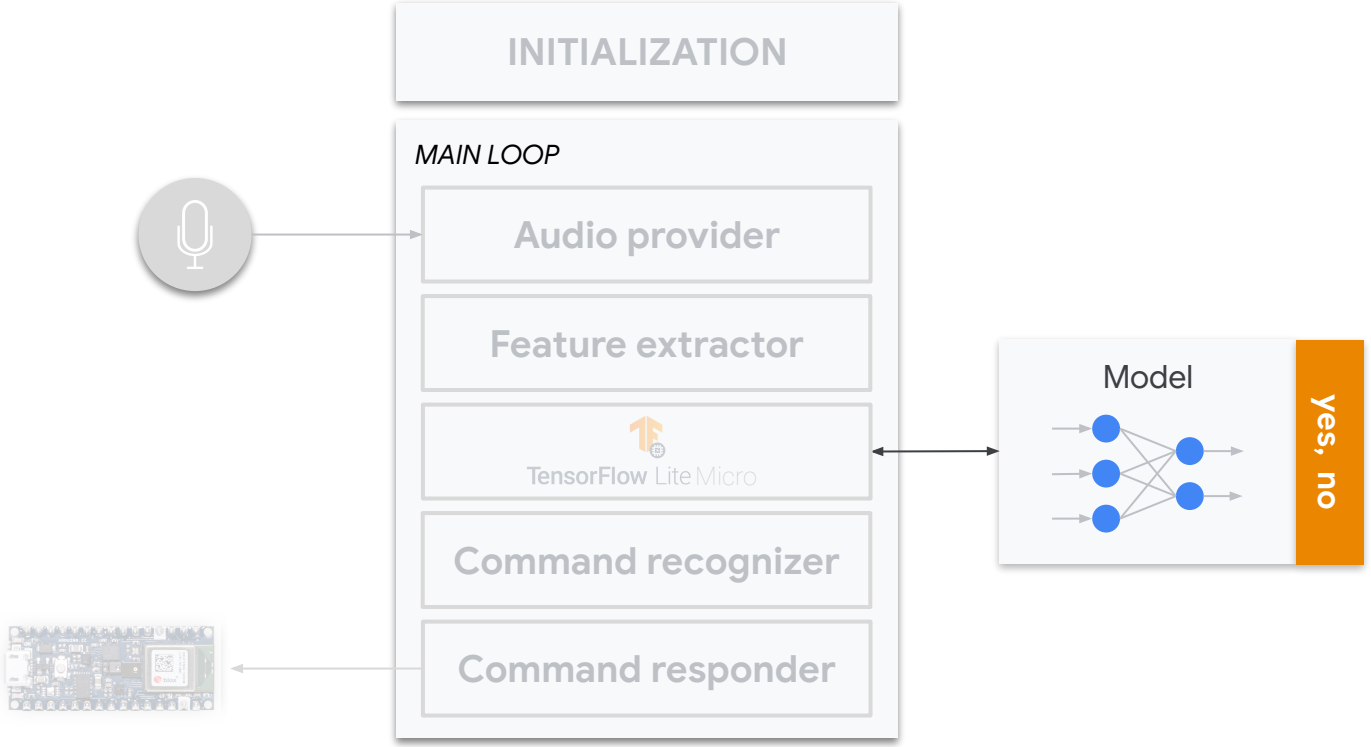
Data Preprocessing: **Spectrograms**



TFLite Micro **Interpreter**



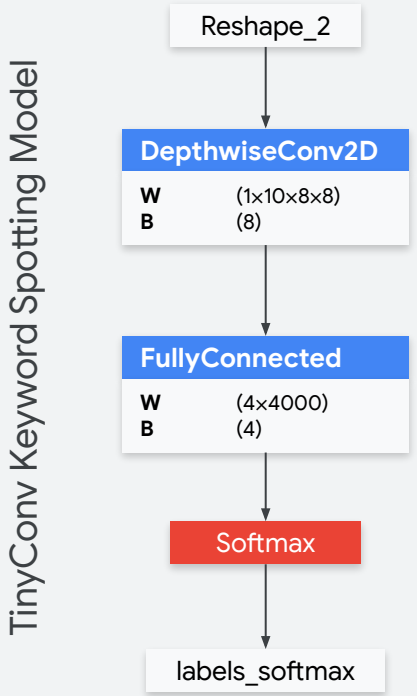
Model


INITIALIZATION
MAIN LOOP
Audio provider
Feature extractor
TensorFlow Lite Micro
Command recognizer
Command responder
Model
yes, no

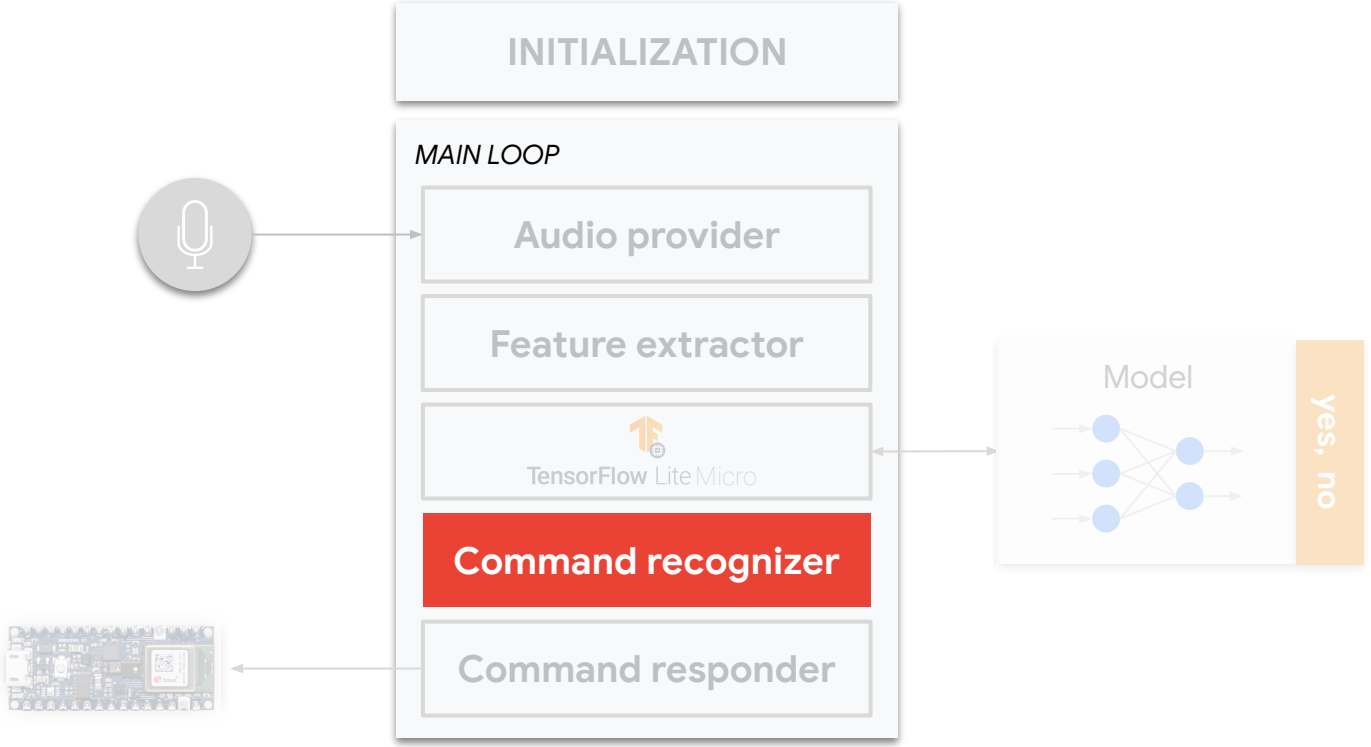
Model **Operators**

NETRON

https://netron.app

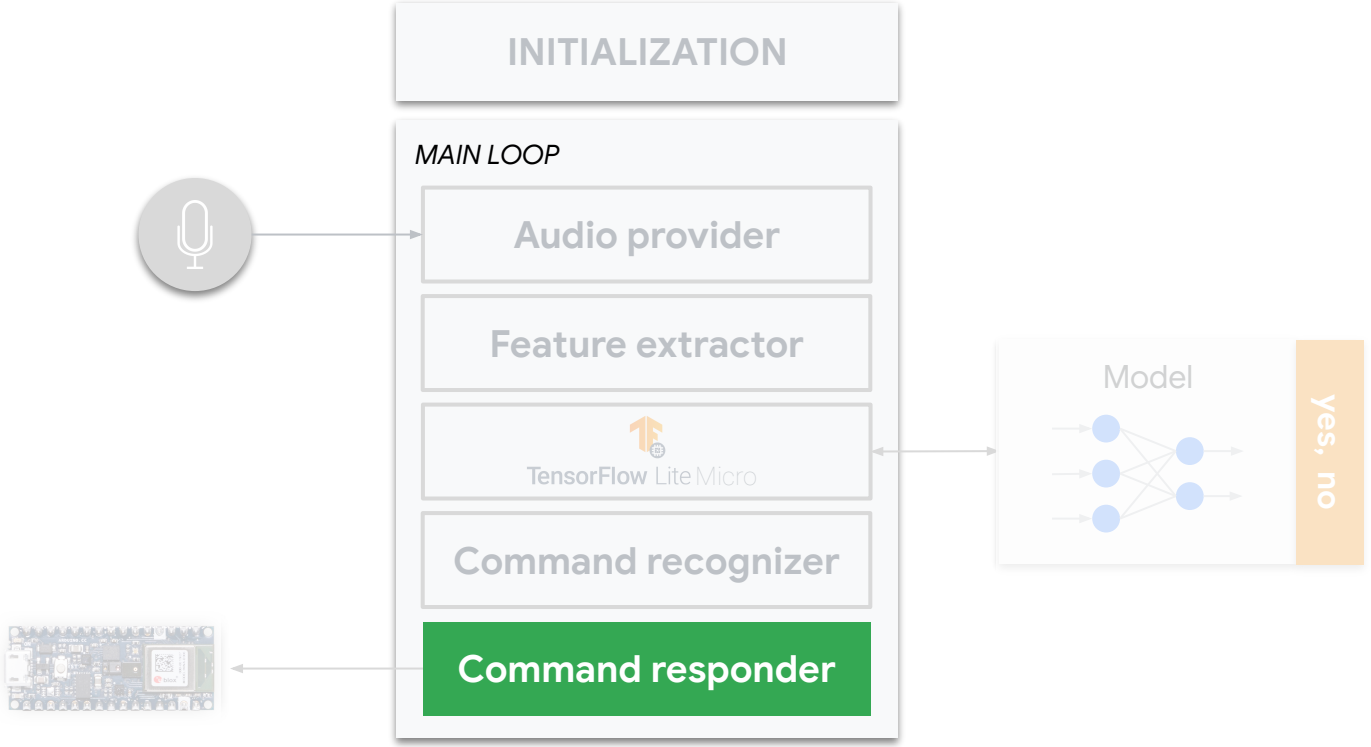


Command **Recognizer**

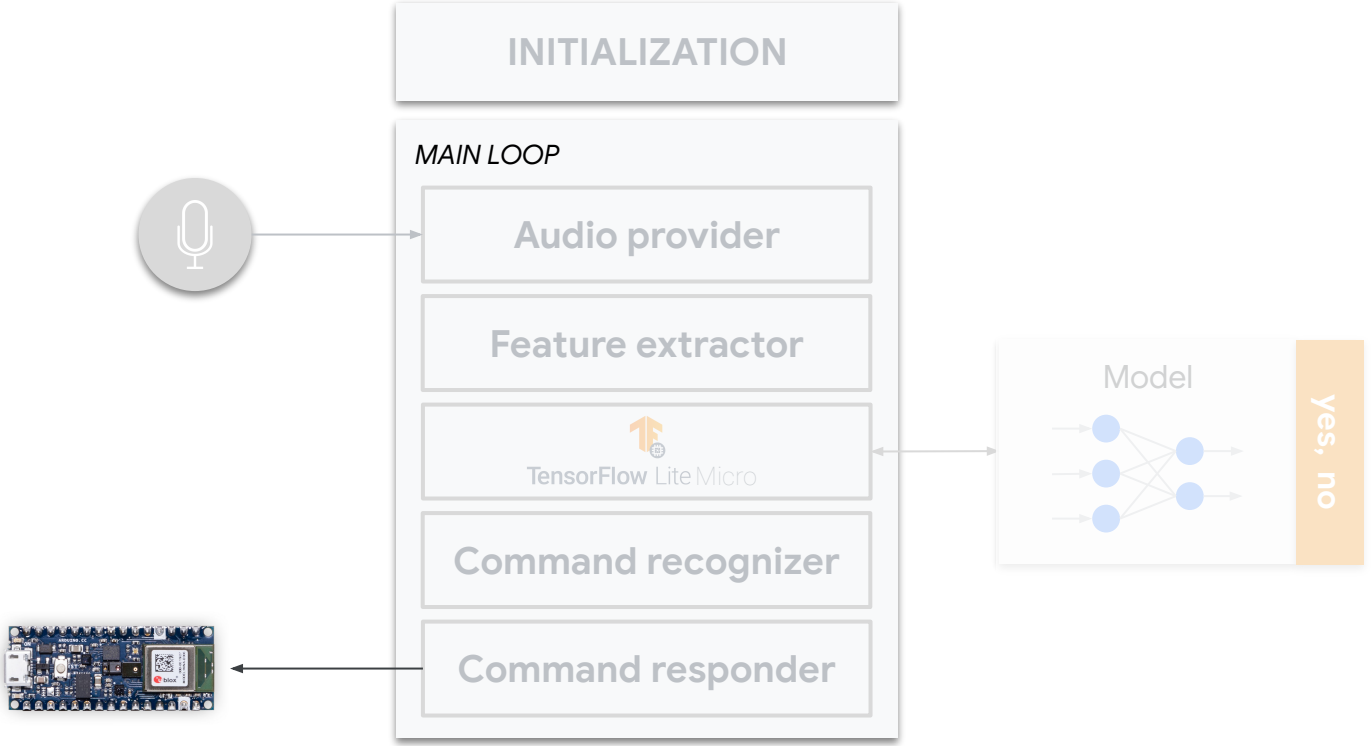


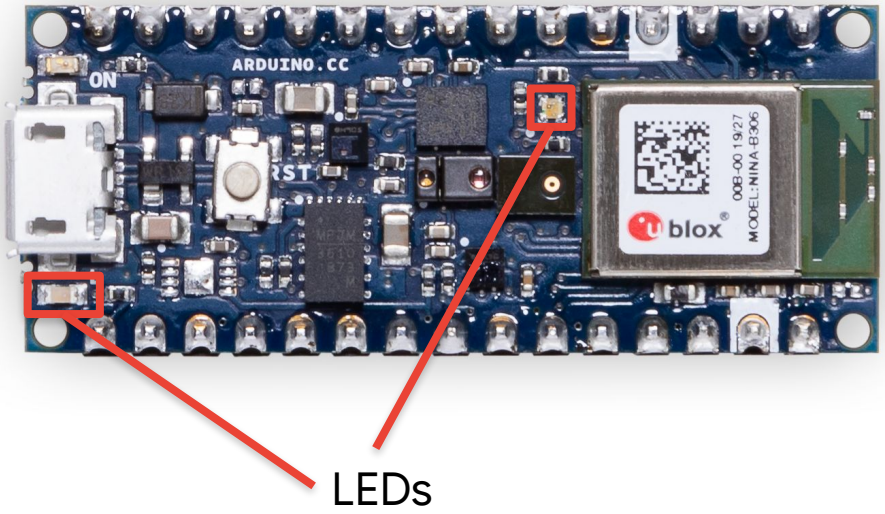
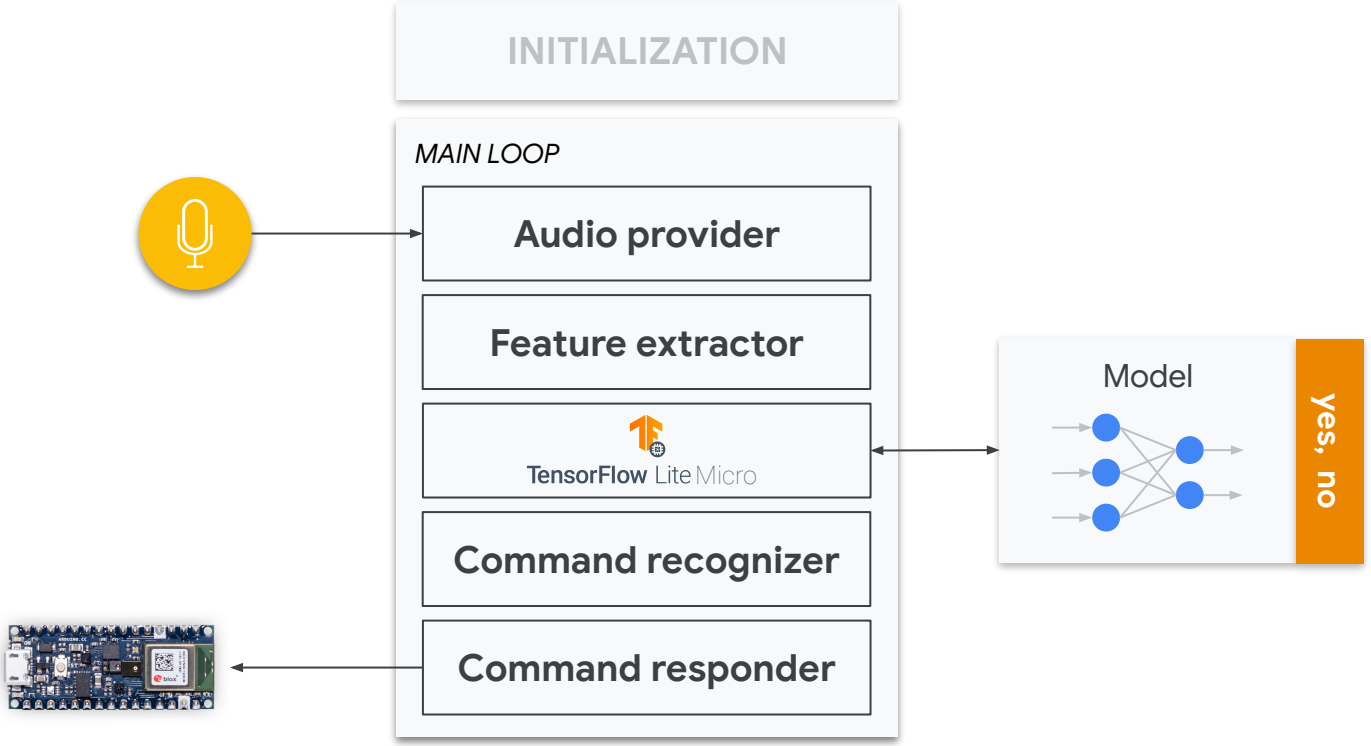
“Yes”
“No”
“Up”
“Down”

Command **Responder**



Device **Response**




ARDUINO.CC
ON
RST
blox
MODEL:NINA-B306
LEDs

Keyword Spotting **Components**