



ML ON THE 'EDGE'

With Adafruit EdgeBadge and Tensorflow Lite

WHO AM I



PATRICK HARALABIDIS

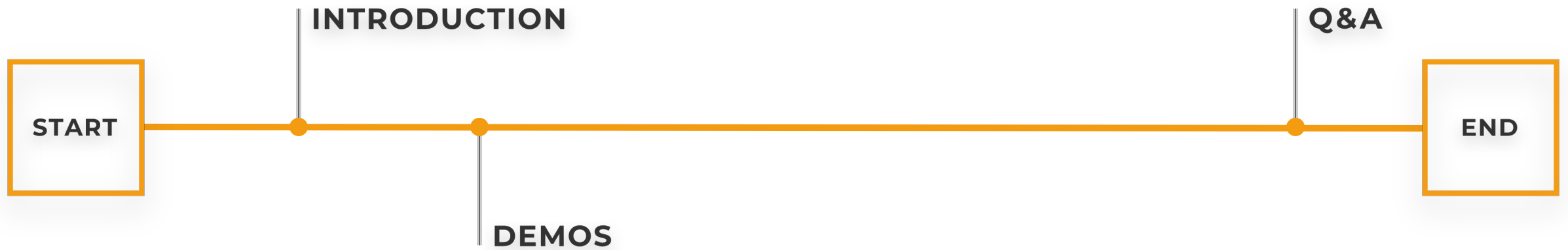
Tech Lead @ Carlisle Homes

@patrickharalabidis

MELBOURNE TENSORFLOW MEETUP

Organiser

TIMELINE



ML ON THE EDGE



LIMITED SO FAR

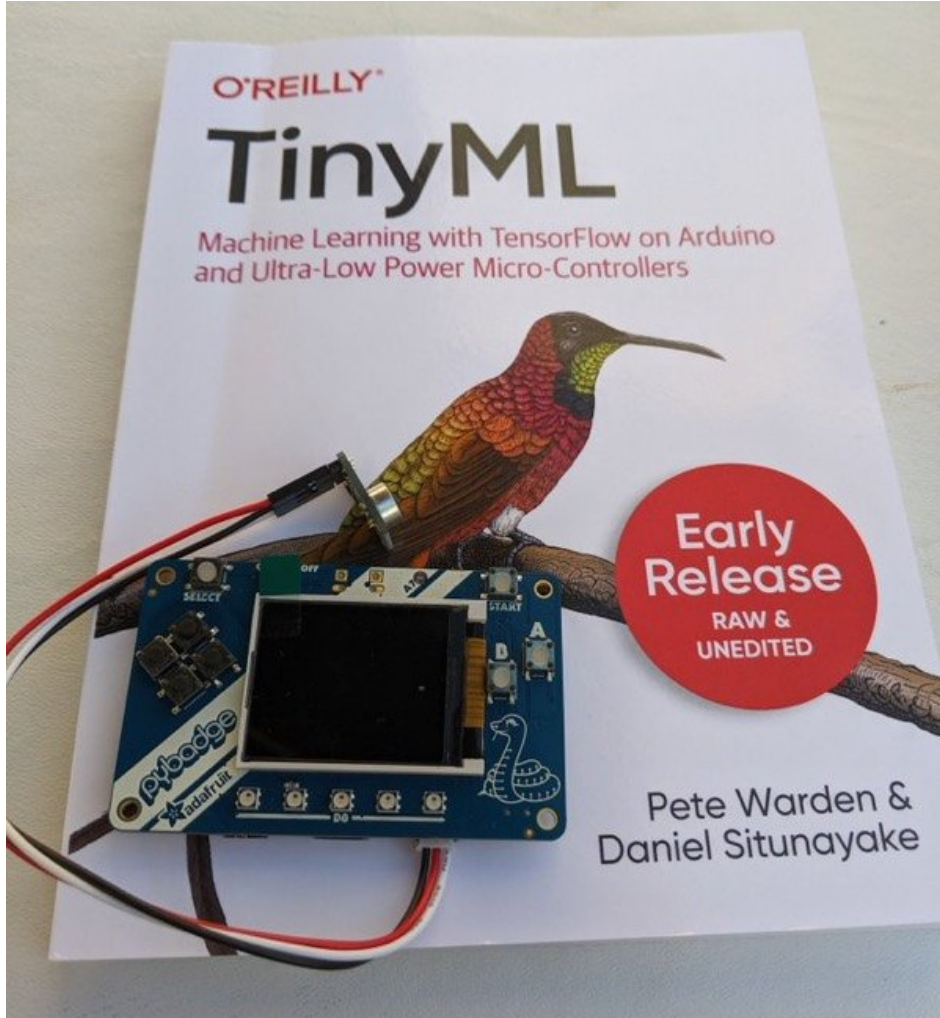
Processing and power constraints

Compatibility of ML libraries with available hardware

TENSORFLOW LITE

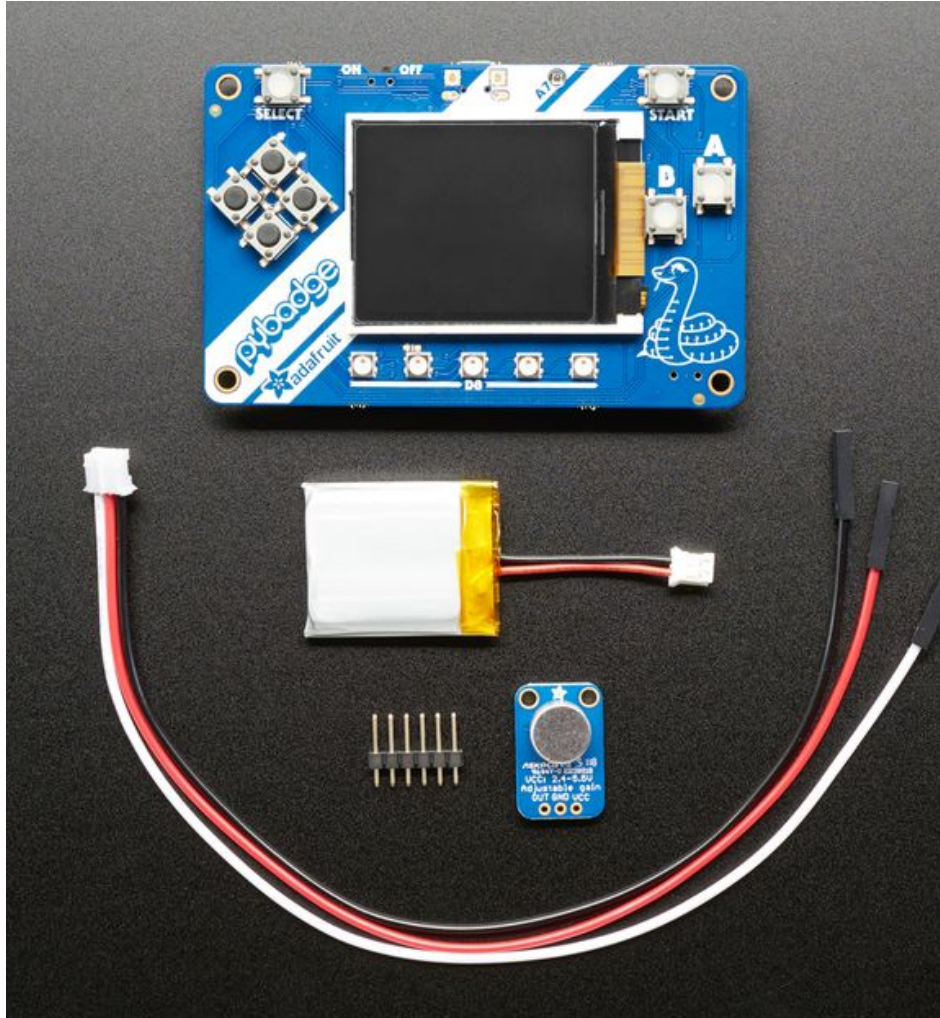
Was the most widely used on mobile and variations micro computers e.g Raspberry Pi

ADAFRUIT PORT



- **TF LITE**
Creates experimental branch for micro
- **ADAFRUIT**
Makes a library to support their devices

TF LITE KIT



- **PYBADGE**

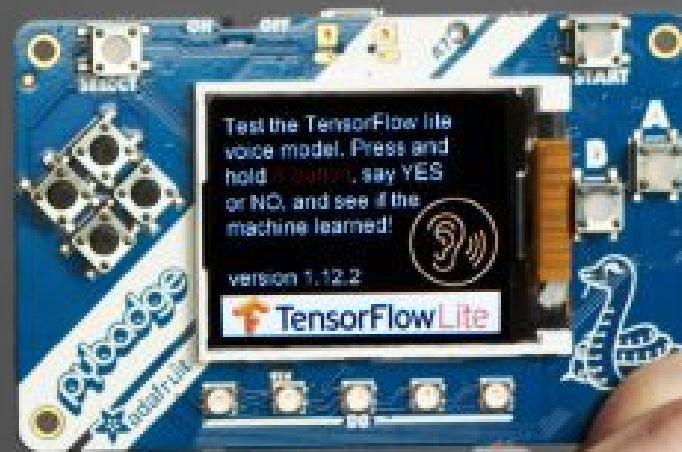
Powered by the ATSAM51, with 512KB of flash and 192KB of RAM.

2 MB of QSPI flash for file storage.

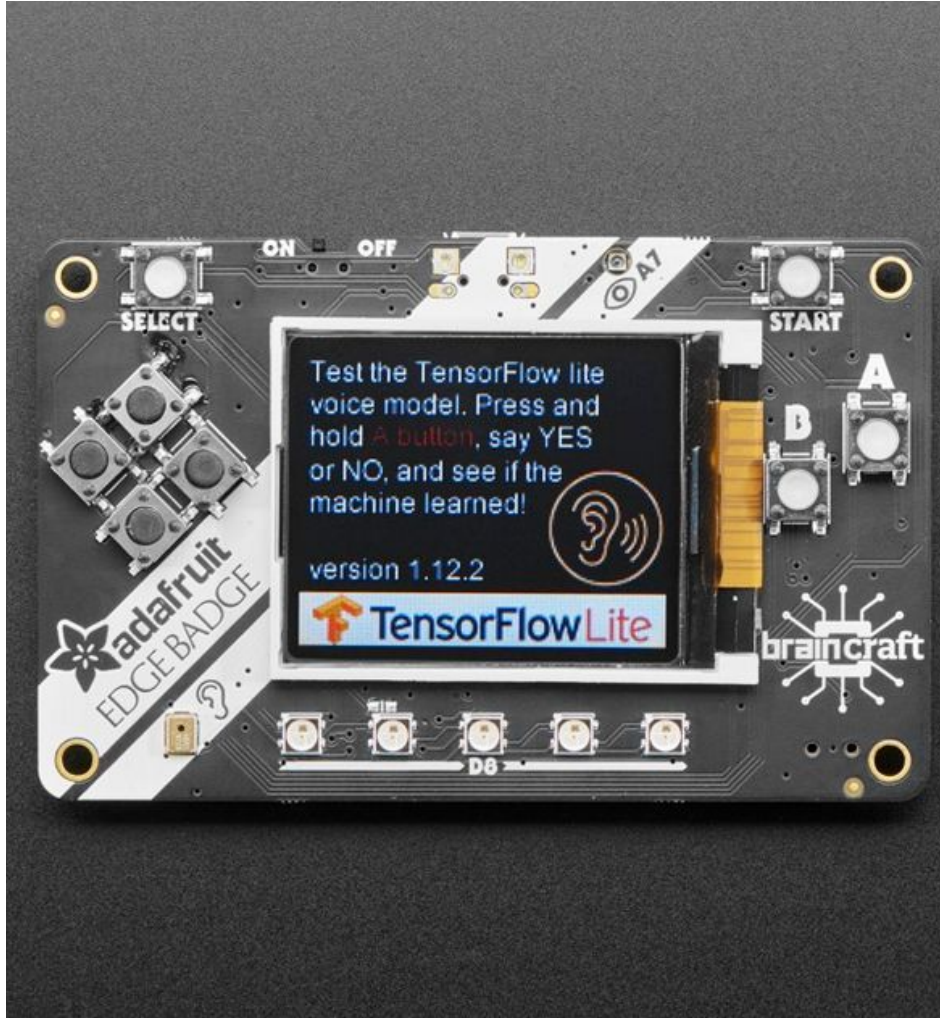
1.8" 160x128 color TFT display.

Your typical sensors, buttons, LED and connectors

DEMO



EDGEBADGE



SO WHAT IS THE EDGEBADGE?

DEMO

Let's all pray to the demo gods



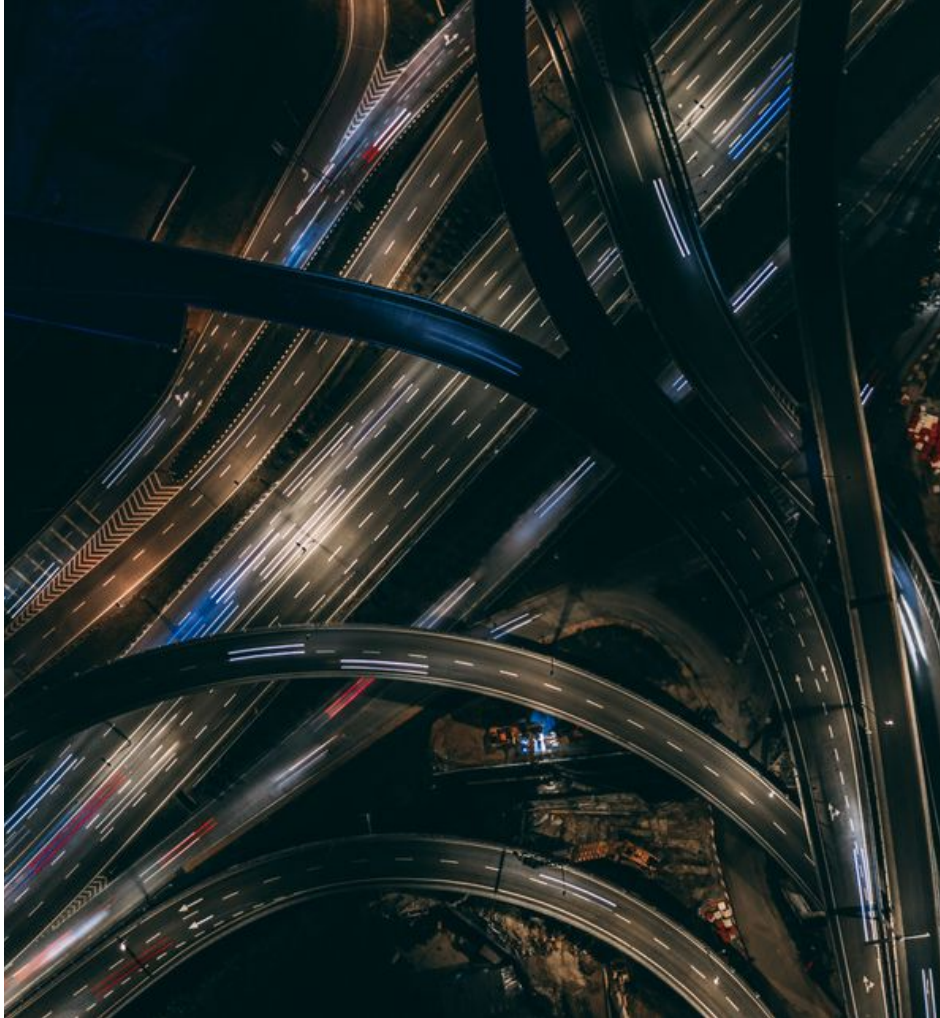
QUESTIONS?



- **NOTE**

I probably don't have the answers

USEFUL LINKS



- **ADAFRRUIT TF LITE LIBRARY**

https://github.com/adafruit/Adafruit_TFSLite

- **TENSORFLOW LITE MICRO**

<https://github.com/tensorflow/tensorflow/tree/master/tensorflow/lite/micro/>

- **SPEECH MODEL TRAINING**

<https://github.com/haralabidis/Community/tree/master/MelblOT>



THANK
YOU