

TensorFlow Lite for Microcontrollers Kit

PRODUCT ID: 4317

Machine learning has come to the 'edge' – small microcontrollers that can run a very miniature version of TensorFlow Lite to do ML computations.

But you don't need super complex hardware to start developing your own TensorFlow models! We've curated a simple kit to dip your toes into machine learning waters.

Kit includes:

- Adafruit PyBadge with SAMD51 Cortex M4F processor @ 120MHz, with display, speaker and buttons
- Electret Microphone Amplifier – MAX4466 with Adjustable Gain
- JST PH 3-Pin to Female Socket Cable – 200mm
- Lithium Ion Polymer Battery with Short Cable – 3.7V 350mAh

The kit uses our PyBadge as your edge processor. It's a compact board – it's credit card sized. It's powered by our favorite chip, the ATSAM51, with 512KB of flash and 192KB of RAM. We add 2 MB of QSPI flash for file storage, handy for TensorFlow Lite files, images, fonts, sounds, or other assets.

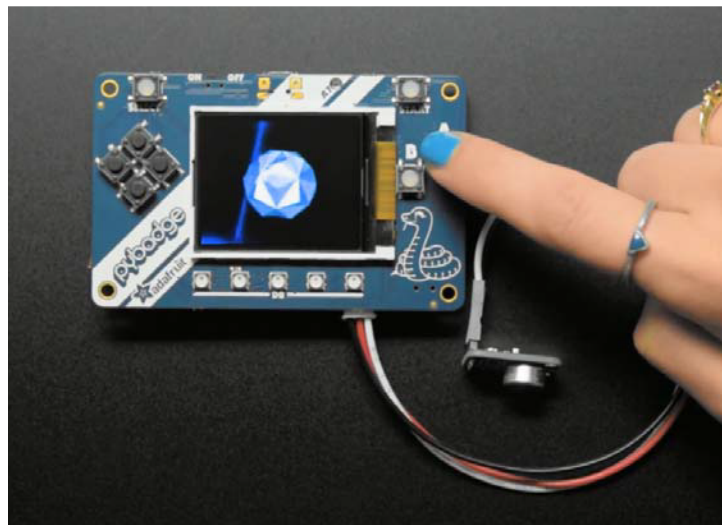
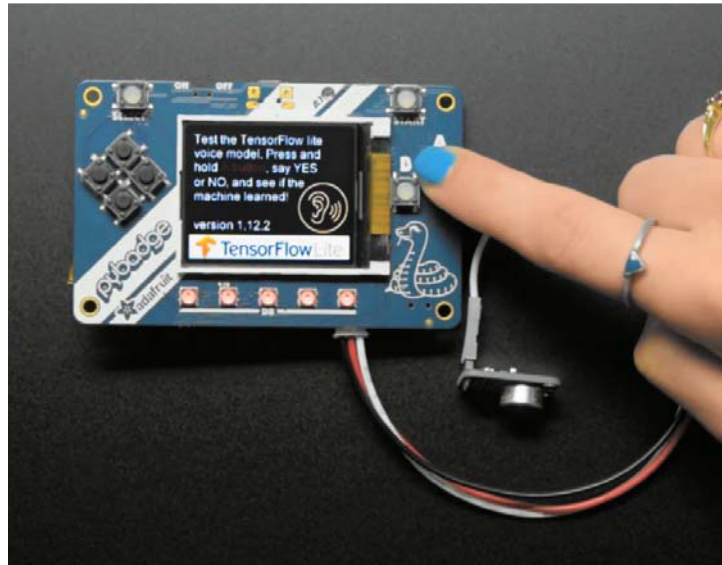
You can plug in a microphone into the ports at the bottom, to add microphone input for micro speech recognition. Our Arduino library has some demos you can get started with to recognize various word pairs like "yes/no", "up/down" and "cat/dog". TensorFlow Lite for microcontrollers is very cutting-edge so expect to see a lot of development happening in this area, with lots of code and process changes.

Some light soldering is required to attach the microphone headers onto the board.

Here's a list of everything you get with the PyBadge, you can read a lot more about it on the product page

- ATSAM51J19 @ 120MHz with 3.3V logic/power – 512KB of FLASH + 192KB of RAM
- 2 MB of SPI Flash for storing images, sounds, animations, whatever!
- 1.8" 160x128 Color TFT Display connected to its own SPI port
- 8 x Game/Control Buttons with nice silicone button tops (these feel great)
- 5 x NeoPixels for badge dazzle, or game score-keeping
- Triple-axis accelerometer (motion sensor)
- Light sensor, reverse-mount so that it points out the front
- Built in buzzer mini-speaker
- Mono Class-D speaker driver for 4-8 ohm speakers, up to 2 Watts
- LiPoly battery port with built in recharging capability
- USB port for battery charging, programming and debugging
- Two female header strips with Feather-compatible pinout so you can plug any FeatherWings in
- JST ports for NeoPixels, sensor input, and I2C (you can fit I2C Grove connectors in here)
- Reset button
- On-Off switch

TECHNICAL DETAILS



<https://www.adafruit.com/product/4317/7-26-19>