codecentric

Hackathon Amsterdam: IoT Applied

Coding with Craftsmen

CC Coding with Craftsmen

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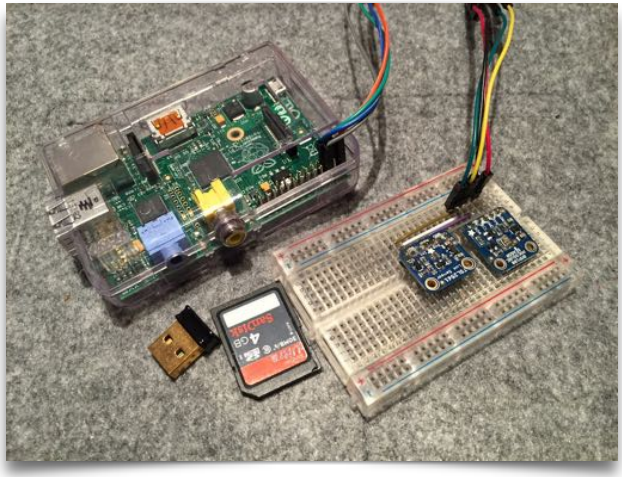
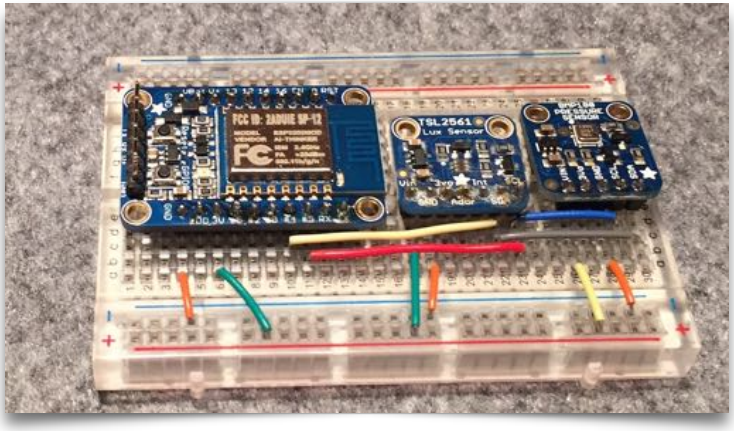
www.codecentric.de
blog.codecentric.de
www.jensd.de
www.mqttfx.org

@jerady

ESP8266

http://www.jensd.de/wordpress/?p=2110





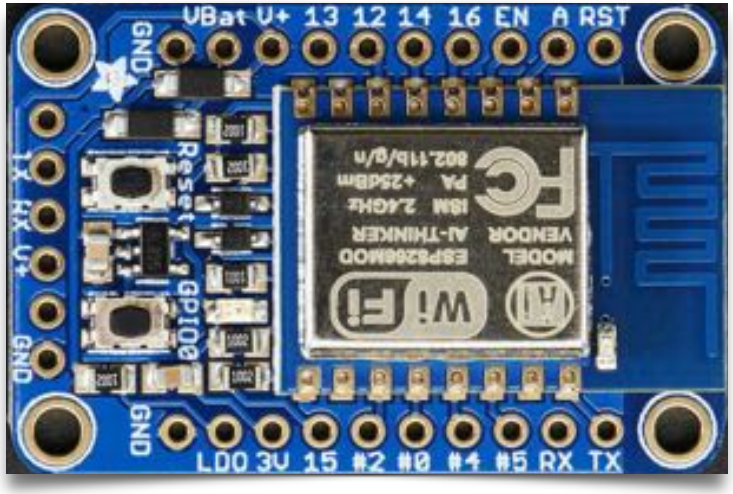
	RasPi	ESP8266
Board	40 €	10 €
SD-Card	4 €	–
WLAN-Stick	8 €	–
Total	52 €	10 €
Power	3W	1W

Adafruit HUZAAH ESP8266 breakout highlights

- 80-MHz-Mikrocontroller
- Wi-Fi Direct (P2P), soft-AP
- Integrated TCP/IP protocol stack with DNS Support
- Wake up and transmit packets in < 2ms
- 4MB Flash-Chip
- Onboard-Antenna
- Status LEDs
- Reset button
- User button that can also put the chip into bootloading mode,

Adafruit HUZAAH ESP8266 breakout I/O

- 1 x Analog input (1.8V max)
- 9 x GPIO (3.3V logic), which can also be used for I2C or SPI
- 2 x UART pins
- 2 x 3-12V power inputs, reset, enable, LDO-disable, 3.3V output



Adafruit Feather HUZZAH ESP8266

NodeMCU v2

Sensors (I²C)

- **BME 280 / BMP 180**
  - Temperature / Pressure / Altitude

    https://www.adafruit.com/products/1603
- **TSL2561**
  - Luminosity / Lux / Light

    https://www.adafruit.com/products/439
- **SI1145**
  - UV-Index

    https://www.adafruit.com/products/1777
- **HTU21D**
  - **Temperature / Humidity**

    https://www.adafruit.com/products/1899

Arduino IDE

https://www.arduino.cc/en/Main/Software

Download the Arduino Software

Install Libraries

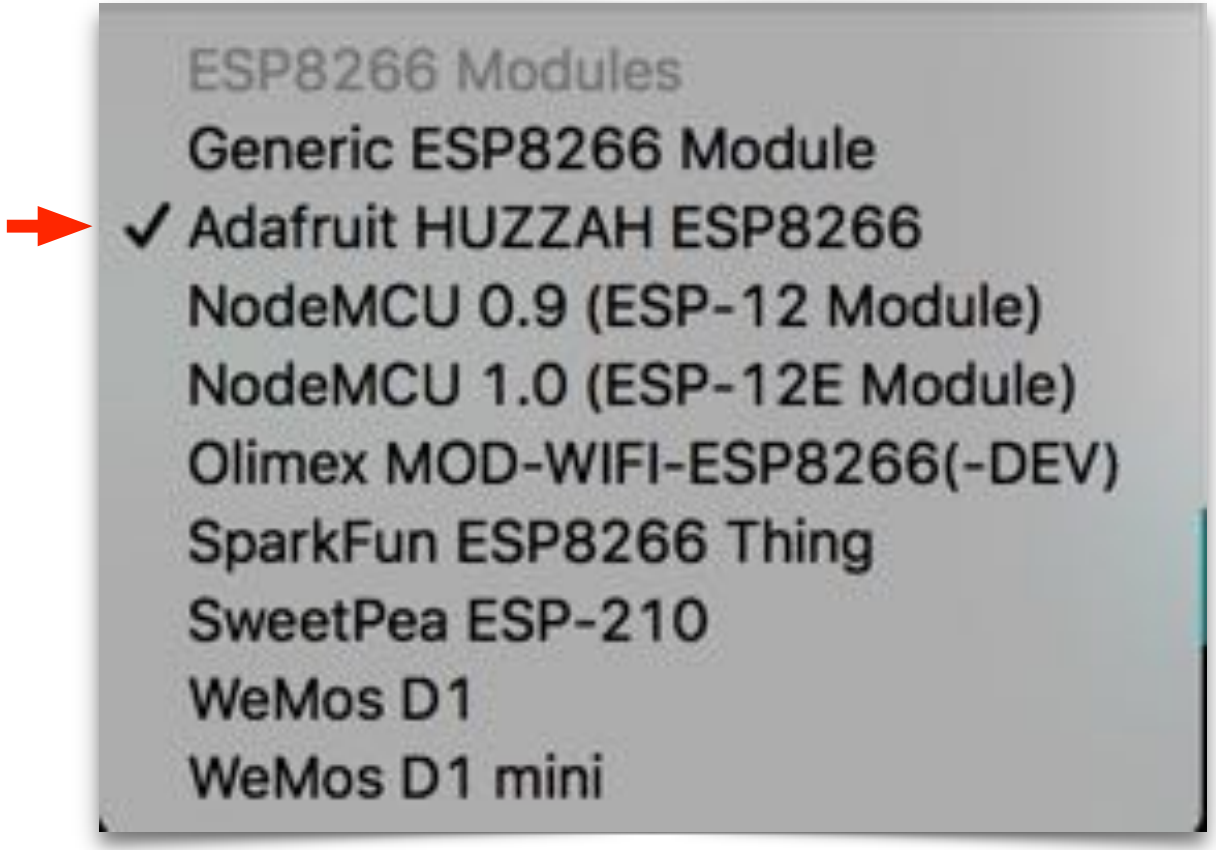
The Libraries almost all there, can be easily installed via the Arduino IDE Library Manager.
Except for the esp8266 support the an additional Board Manager URL has to be set in the settings:

`http://arduino.esp8266.com/stable/package_esp8266com_index.json`

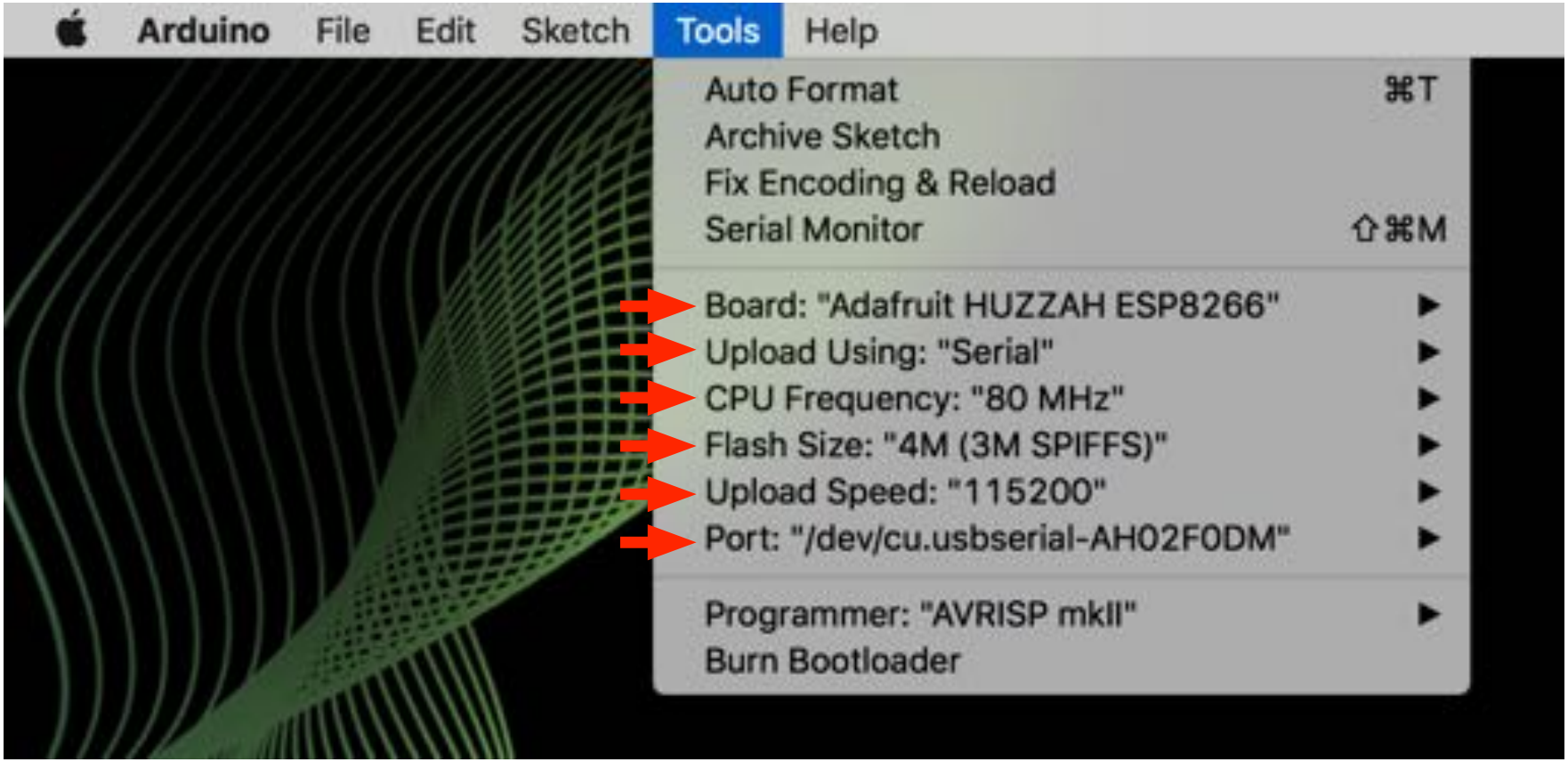
HINT: It turns out that you have to press  and close the dialog with „OK“ to activate the package (or restart Arduino IDE)

Boards Manager: Install ESP8266 Drivers

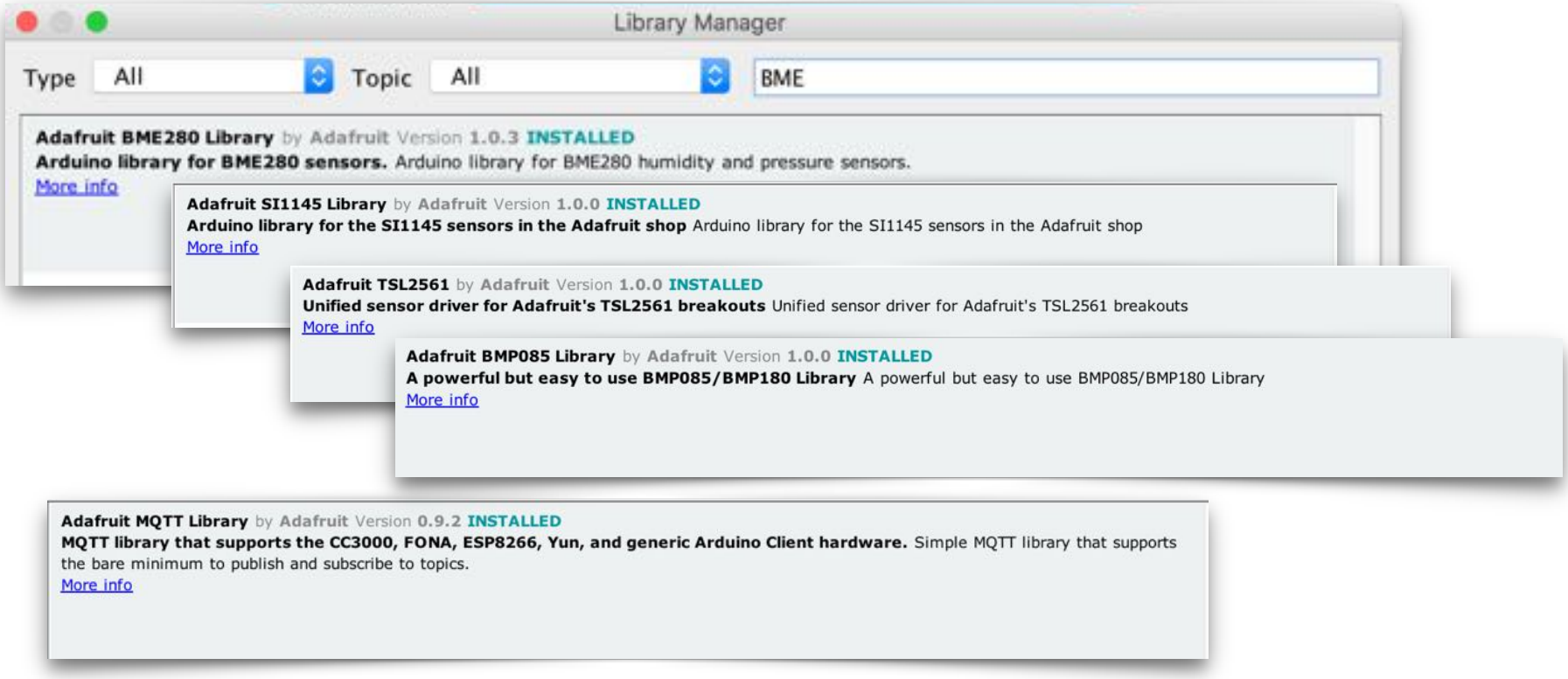
Choose Adafruit HUZZAH ESP8266



Setup Adafruit HUZZAH ESP8266



Library Manager: Install (necessary) Sensors Drivers + Adafruit MQTT Library



Note the bunch of example code!

Enable the flash mode

press + hold “Reset” button

then

press + hold “GPIO0” button

then

release “Reset” button

then

release “GPIO0” button

-> the red LED turns on (with lower brightness)

www.jensd.de