# Raspberry Pi for Developers and Makers

By Ben Nuttall, Cambridge UK

Follow  @ben_nutall Twitter, GitHub

## Current Raspberry Pi Models
- $35 Pi 3
- $5/$10 Pi Zero

## Raspbian
- OS running on Raspberry Pi, based on Debian
- Has desktop equivalent too (Raspberry Pi Desktop x86)
- Programming options
  - Ships with Python, Scratch (what is it?), standard linux tools like C, C++, Java
  - Install anything that runs on Arm
- 10 Hello World programs for Raspberry Pi on opensource.com

## Python IDE from Raspberry Pi - Mu
- Multi mode
- Open source. github.com/mu-editor/mu

## GPIO Pins - General Purpose Input/Output
- Add-on board/HAT (Hardware Attached onTop)
- Can attach several hardware like LED

## GPIO Zero - python API
- Zero-boiler plate Pythonic library
- Intended for use in education
- Extensible
- Picamera - camera module
  - 8 MP
  - Visible light and infra-red versions available.
  - CLI and Python library

- Astro Pi - Raspberry Pis running in ISS
- Sense HAT available online

## PiWheels
- piwheels.org - python package repo providing arm platform wheels for Raspberry Pi
- Massively reduces pip install time for Raspberry Pi users, natively compiled on Raspberry Pi 3 hardware

## openCV
- Open Computer Vision library
- Facial and visual recognition

## Tensorflow
- Custom build of tensorflow for Raspberry Pi

## Google AIY Voice Kit
- Cardboard version of Google Home
- Runs Pi inside

## Google AIY Vision Kit
- More vision focused

## SSH gateway
- Use SSH key-phrase only login to get to Pi and then access the internal network.

## Magazines
- MagPi - official community magazine for Raspberry Pi - available as free PDF
- The official Raspberry PI Projects book - several ideas and inspirations to utilize Raspberry Pi

Meetups
- raspberrypi.org/jam
- CoderDojo - after school coding programs for students. (coderdojo.com)

– [coolestprojects.org](http://coolestprojects.org) - technology fair for young people.