



THE BACKOFFICE UNIVERSITY

Making Learning Fun



# DIY Mega Drive Mini Pt2

Dr Andrew Armstrong

# Watch Part 1!

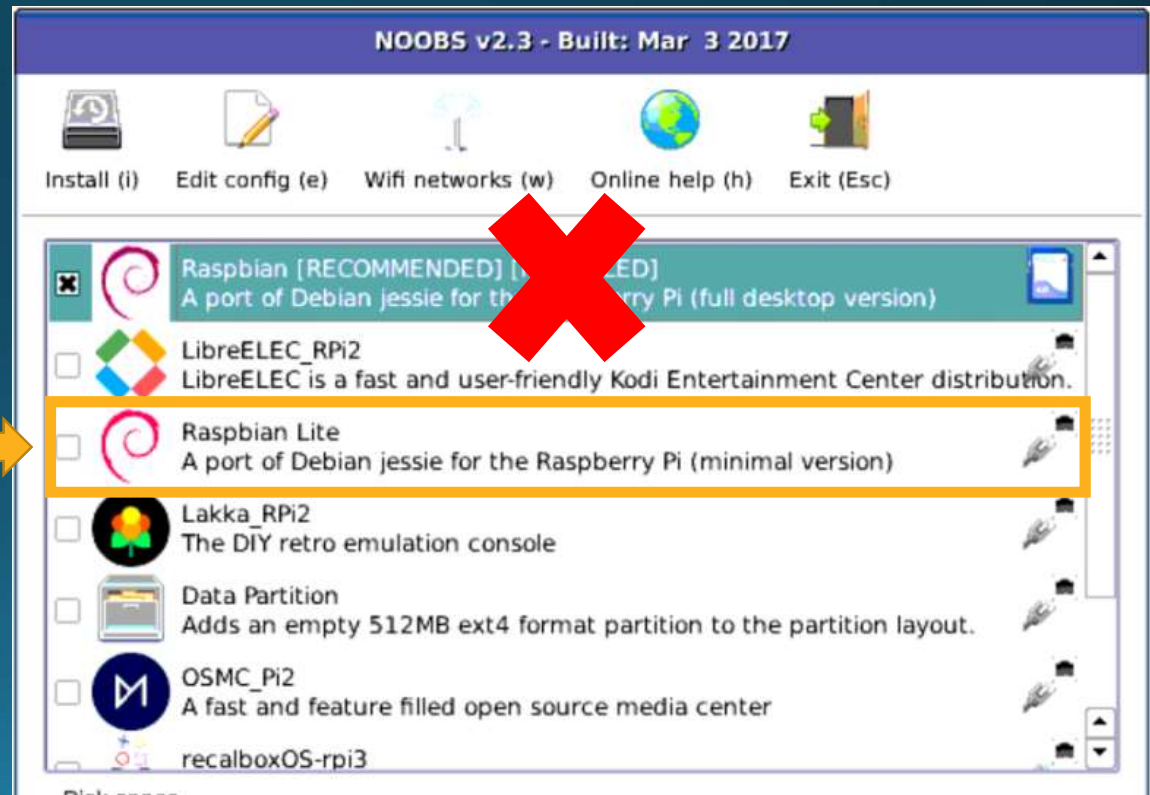
- <https://www.youtube.com/watch?v=cAqT-5XCoWA>



# Install Noobs

- <https://www.raspberrypi.org/downloads/noobs/>
- Install Raspbian Lite (or similar)
  - You do **not** want a desktop build!

THIS ONE! 😊 →



# Install Retroarch

- Easy Installation
  - <https://www.retroarch.com/>
- Source Installation
  - <https://www.raspberrypi.org/forums/viewtopic.php?t=56070>
- Make sure the binary is available at:
  - `/home/pi/retro/retroarch`



# Install Python

- `sudo apt-get install python-spidev python3-spidev`





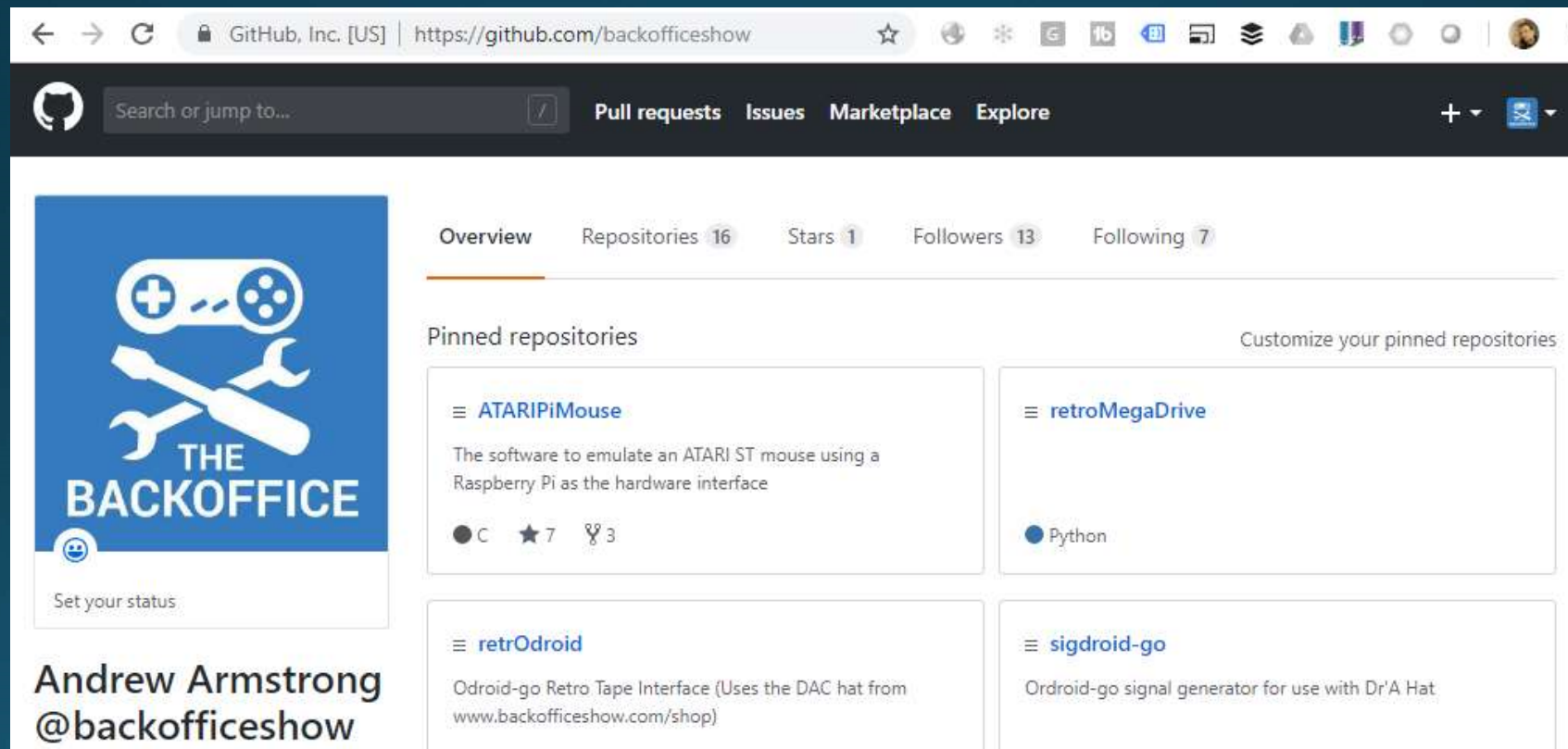
# Install RFID Reader library (RC522 Hardware)

- <https://www.raspberrypi-spy.co.uk/2018/02/rc522-rfid-tag-read-raspberry-pi/>
- Make sure the library is installed to:
  - `/home/pi/MFRC522-python`



# Install THE BACKOFFICE retroMegaDrive

- <https://github.com/backofficeshow/retroMegaDrive>



The screenshot shows the GitHub profile page for the user 'backofficeshow'. The browser address bar displays 'https://github.com/backofficeshow'. The profile header includes a blue repository icon with a game controller and crossed tools, the text 'THE BACKOFFICE', and the user's name 'Andrew Armstrong @backofficeshow'. The navigation bar shows 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. The profile statistics are: Overview (selected), Repositories 16, Stars 1, Followers 13, and Following 7. The 'Pinned repositories' section lists four projects: 'ATARIPiMouse' (C, 7 stars, 3 forks), 'retroMegaDrive' (Python), 'retrOdroid' (Odroid-go Retro Tape Interface), and 'sigdroid-go' (Odroid-go signal generator).

GitHub, Inc. [US] | <https://github.com/backofficeshow>

Search or jump to... Pull requests Issues Marketplace Explore

**THE BACKOFFICE**

Set your status

**Andrew Armstrong**  
**@backofficeshow**

Overview Repositories 16 Stars 1 Followers 13 Following 7

Pinned repositories Customize your pinned repositories

- ATARIPiMouse**  
The software to emulate an ATARI ST mouse using a Raspberry Pi as the hardware interface  
C 7 stars 3 forks
- retroMegaDrive**  
Python
- retrOdroid**  
Odroid-go Retro Tape Interface (Uses the DAC hat from [www.backofficeshow.com/shop](http://www.backofficeshow.com/shop))
- sigdroid-go**  
Odroid-go signal generator for use with Dr'A Hat

# Install FBI Slideshow Utility

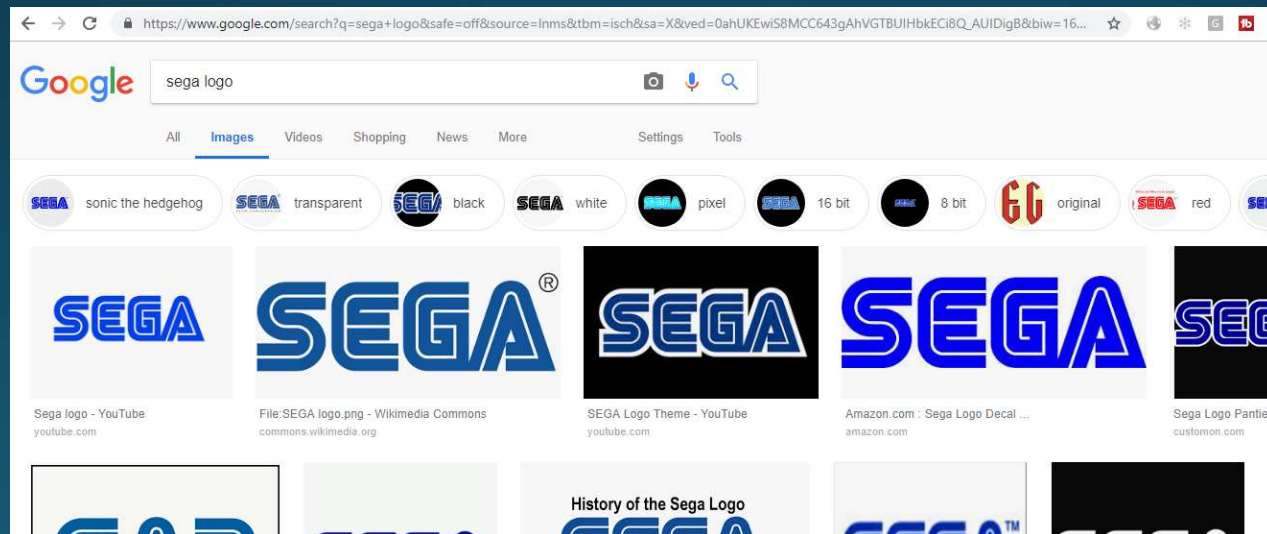
- Install app to display our splash screen
  - Sudo apt install fbi

```
pi@raspberrypi:~$ sudo apt-get install fbi
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  imagemagick
The following NEW packages will be installed:
  fbi
0 upgraded, 1 newly installed, 0 to remove and 52 not upgraded.
Need to get 59.7 kB of archives.
After this operation, 157 kB of additional disk space will be used.
Get:1 http://mirrordirector.raspbian.org/raspbian/ wheezy/main fbi armhf 2.07-10 [59.7 kB]
Fetched 59.7 kB in 1s (40.0 kB/s)
Selecting previously unselected package fbi.
(Reading database ... 64758 files and directories currently installed.)
Unpacking fbi (from .../archives/fbi_2.07-10_armhf.deb) ...
Processing triggers for mime-support ...
Processing triggers for man-db ...
Setting up fbi (2.07-10) ...
pi@raspberrypi:~$
```



# Create logo files

- The image shown when the System is 'off'
  - /home/pi/logoON.jpg
- The image shown when the system is 'on'
  - /home/pi/logoOFF.jpg



# Install your roms

- Download your rom and copy to the rom folder
- *Currently set to using md files but you can adapt and experiment!*
- For example using sonic.md
  - `cp /SDCARD or USB etc/sonic.md /home/pi/roms`

# Program your RFID

- You need to use the write.py utility to program your game title onto your tag:
  - `cd home/pi/MFRC522-python`
  - Run the write script:
    - `python write.py`
    - Enter the filename WITHOUT the .md extension
    - Swipe your tag over the reader

# Test the software!

- Run retro MegaDrive manually:
  - `cd /home/pi`
  - `python retroMegaDrive.py`
- Swipe your RFID over wherever you placed your reader
- PLAY!
- BE AWARE:
  - The retroMegaDrive program expects the Mega Drive to be in the 'ON' position
  - In the 'ON' position it will activate the LED and allow for swipe
  - In the 'OFF' position it will show the off screen. Or return here during a game.

**Thank you**

**Please like and subscribe**

**Have a great semester!**

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