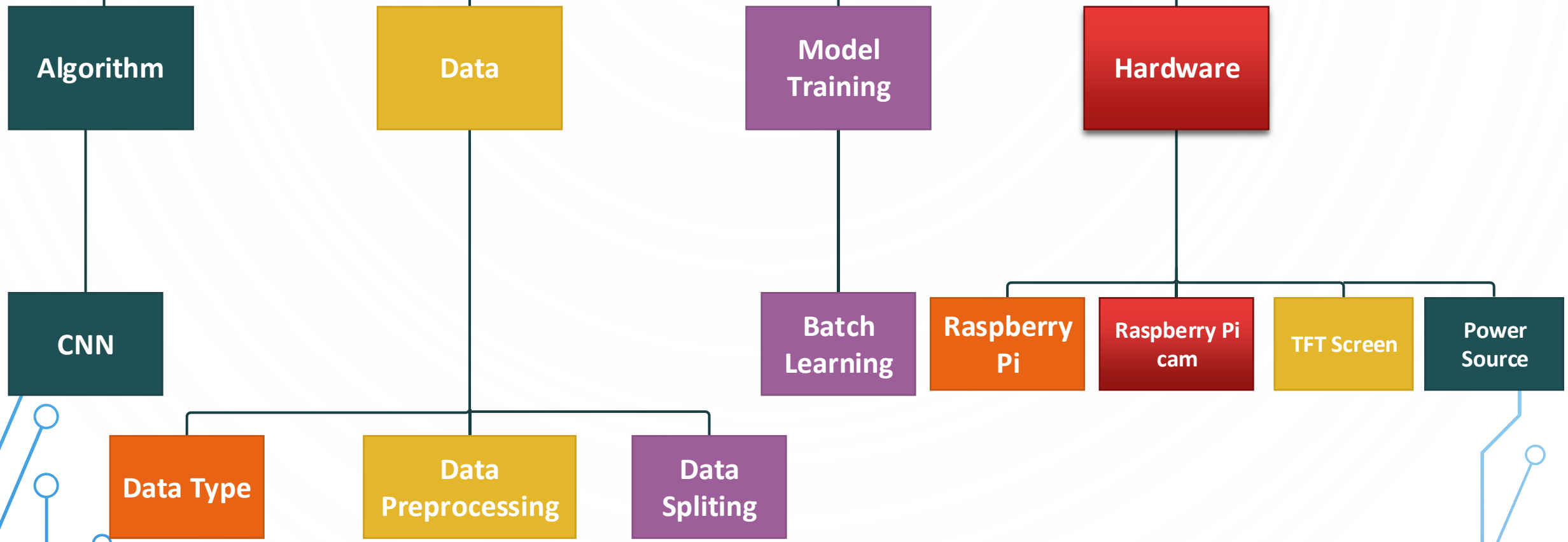
PI-HEALTH: DIGITAL SKIN DISEASE DETECTION BASED ON ML

TABLE OF CONTENT

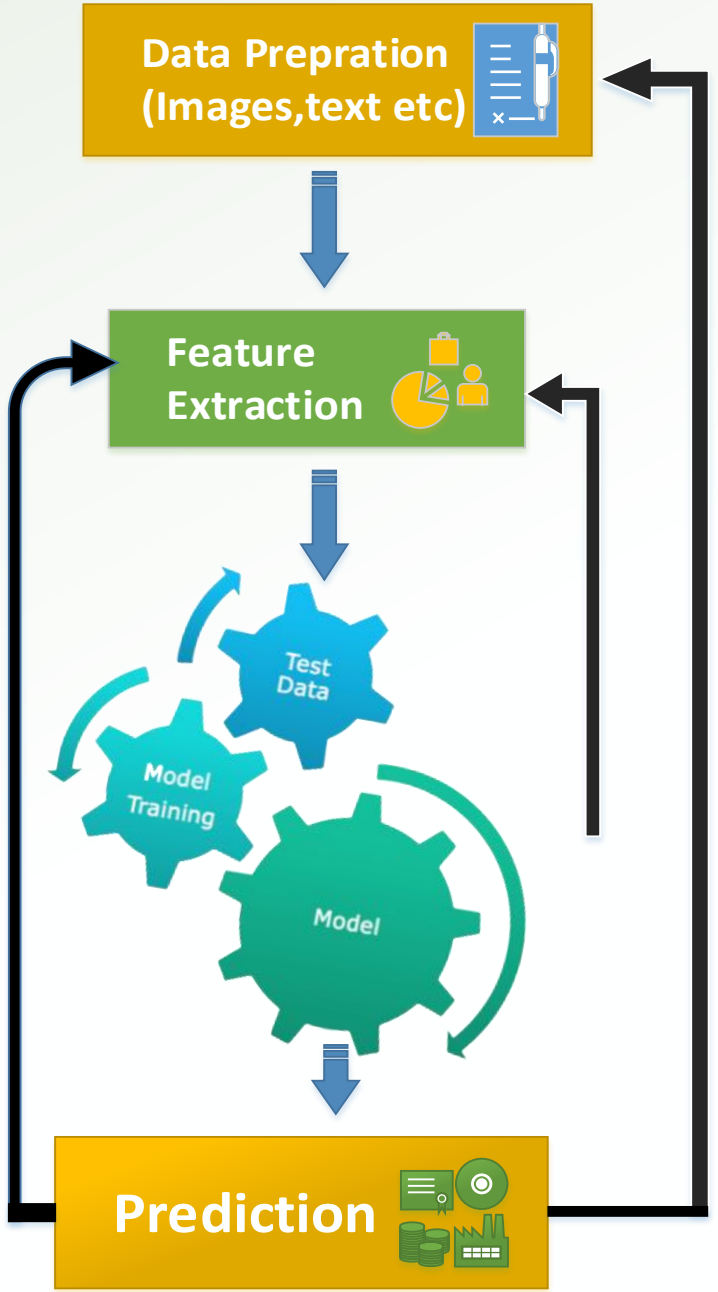
Pi-Health: Digital Skin Disease Detection based on ML



Problem

- Dermatological Diseases are the most Prevalent disease Worldwide
- Its Diagnosis is extremely difficult & Time Consuming
- It requires one to have extensive experience in the domain
- If skin disease is detected early, the cure rate is high.
- Dermatologists have been trying different methods to aid in the detection of the rapid growing skin

Machine Learning



Pi-Health

Raspberry Pi 4

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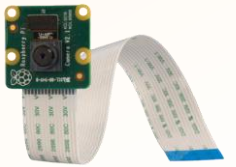

Raspberry Pi camera

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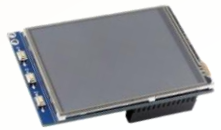

TFT Screen for Raspberry Pi

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Power Source

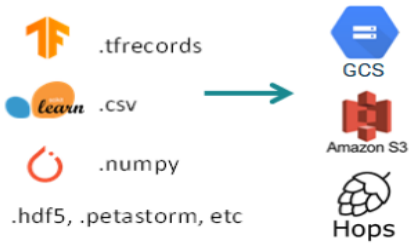
DATA SETs

Data sources:

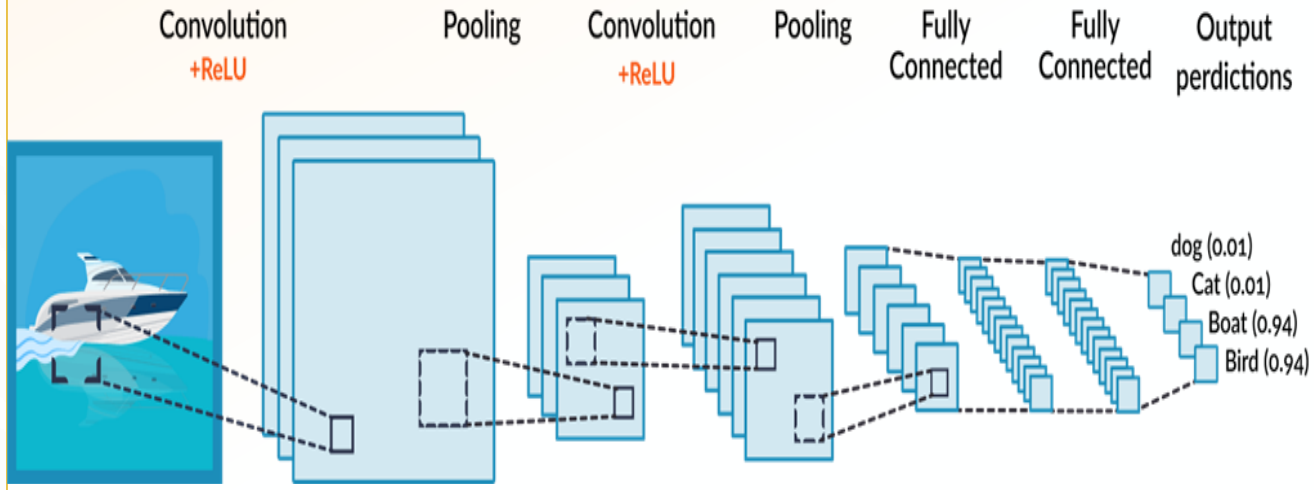
kaggle

Amazon's AWS datasets

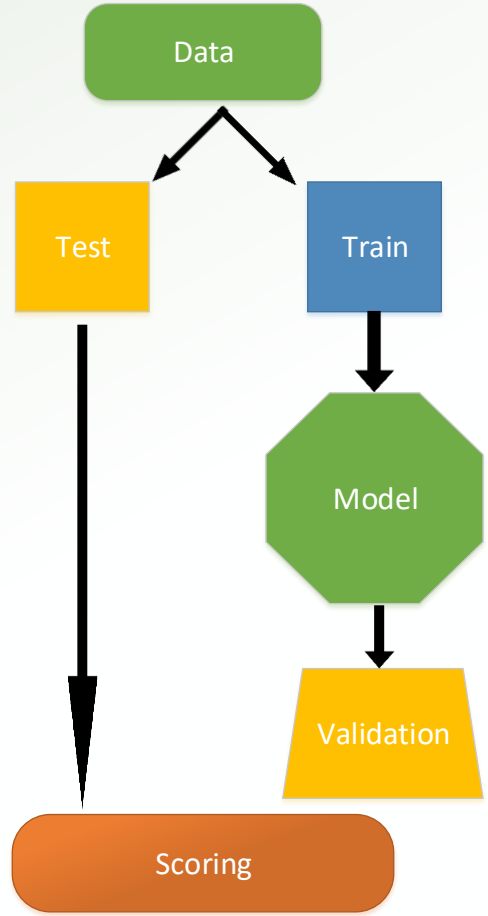
Datatype:

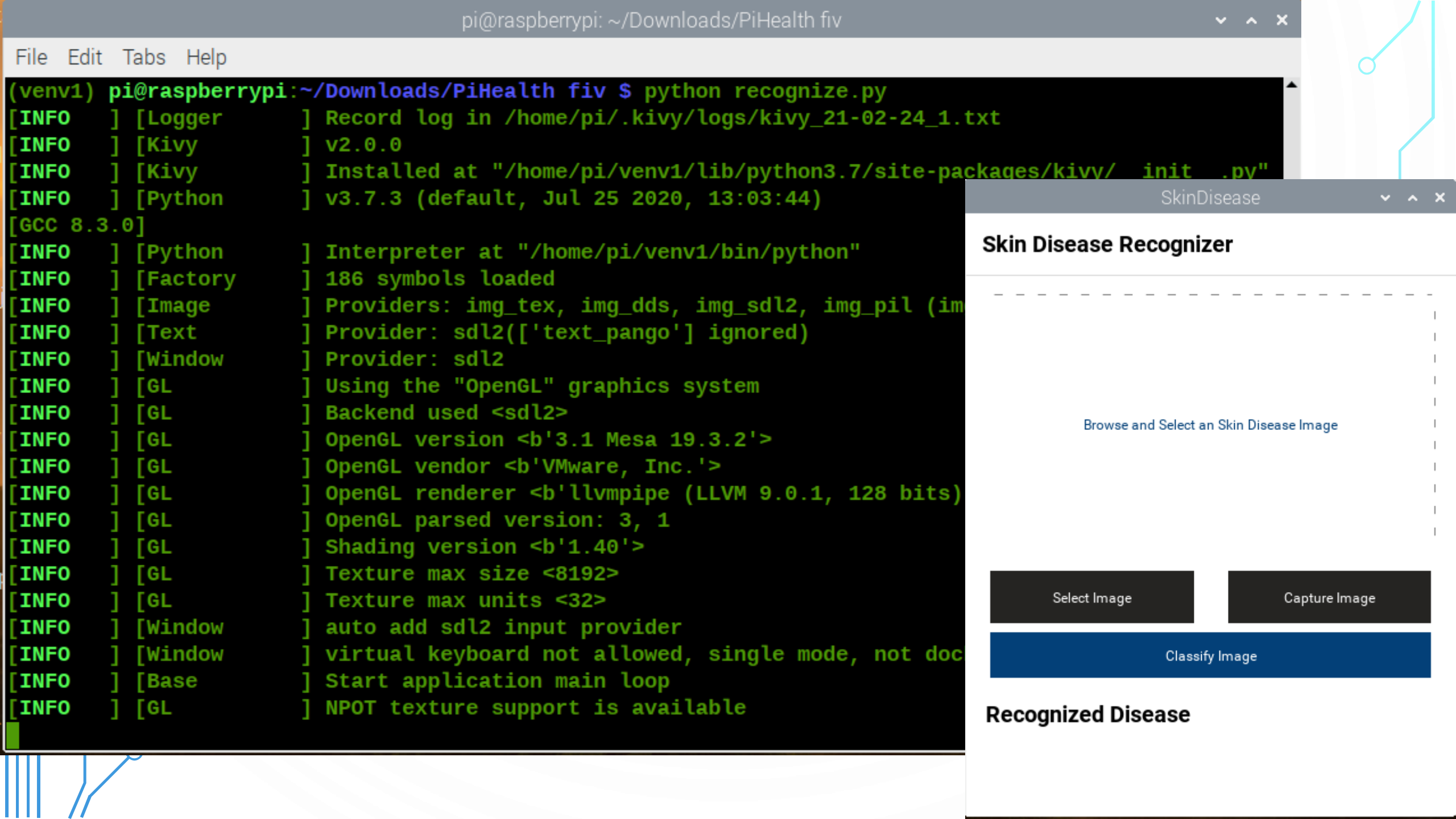


CNN Algorithm



Batch Learning




pi@raspberrypi: ~/Downloads/PiHealth fiv
File Edit Tabs Help
(venv1) pi@raspberrypi:~/Downloads/PiHealth fiv $ python recognize.py
[INFO] [Logger] Record log in /home/pi/.kivy/logs/kivy_21-02-24_1.txt
[INFO] [Kivy] v2.0.0
[INFO] [Kivy] Installed at "/home/pi/venv1/lib/python3.7/site-packages/kivy/__init__.py"
[INFO] [Python] v3.7.3 (default, Jul 25 2020, 13:03:44)
[GCC 8.3.0]
[INFO] [Python] Interpreter at "/home/pi/venv1/bin/python"
[INFO] [Factory] 186 symbols loaded
[INFO] [Image] Providers: img_tex, img_dds, img_sdl2, img_pil (im
[INFO] [Text] Provider: sdl2(['text_pango'] ignored)
[INFO] [Window] Provider: sdl2
[INFO] [GL] Using the "OpenGL" graphics system
[INFO] [GL] Backend used <sdl2>
[INFO] [GL] OpenGL version <b'3.1 Mesa 19.3.2'>
[INFO] [GL] OpenGL vendor <b'VMware, Inc.'>
[INFO] [GL] OpenGL renderer <b'llvmpipe (LLVM 9.0.1, 128 bits)
[INFO] [GL] OpenGL parsed version: 3, 1
[INFO] [GL] Shading version <b'1.40'>
[INFO] [GL] Texture max size <8192>
[INFO] [GL] Texture max units <32>
[INFO] [Window] auto add sdl2 input provider
[INFO] [Window] virtual keyboard not allowed, single mode, not doc
[INFO] [Base] Start application main loop
[INFO] [GL] NPOT texture support is available
SkinDisease
Skin Disease Recognizer
Browse and Select an Skin Disease Image
Select Image
Capture Image
Classify Image
Recognized Disease

SkinDisease

Skin Disease Recognizer

Select Image | Capture Image

Classify Image

Recognized Disease

Hair Loss with 48.03 probability.

SkinDisease

Skin Disease Recognizer

Select Image | Capture Image

Classify Image

Recognized Disease

Nail fungus or other Nail Disease with 81.15 probability.

WHAT IS REMAINING

- Feasibility report

FINAL PI-HEALTH PRODUCT

- To be Continued……