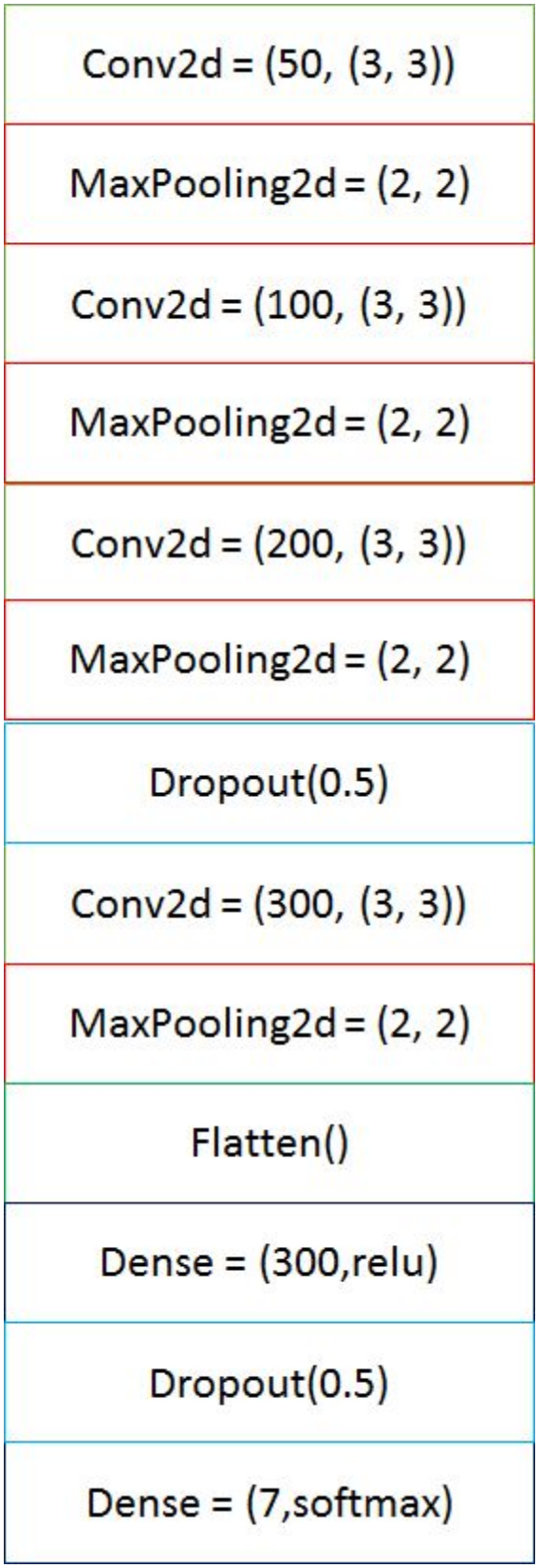
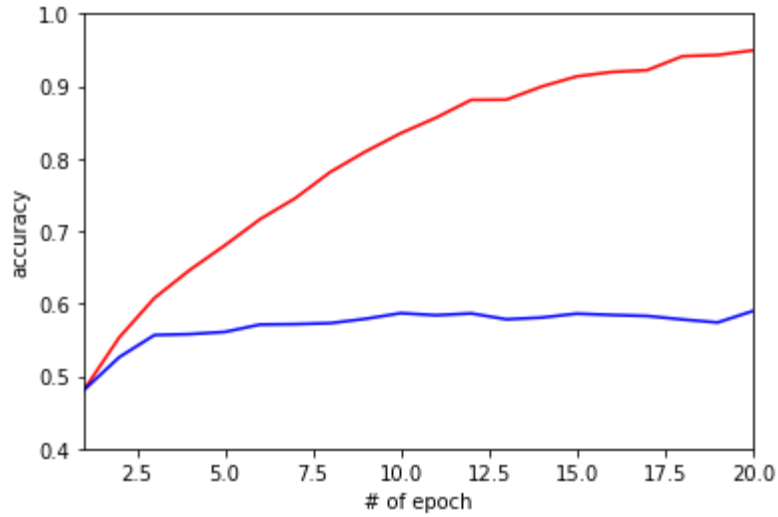
ML hw3 report by r05922135 蔡慶源
problem 1
Model architecture :



Total params: 858,507

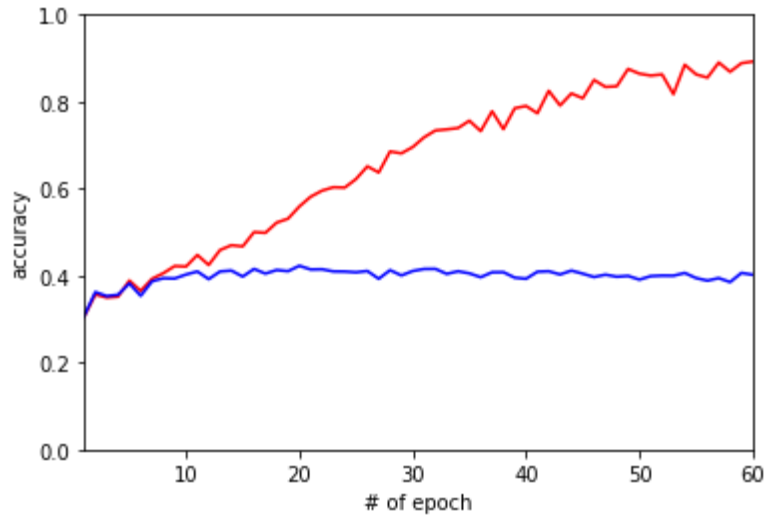
Training Procedure:



紅色:training accuracy
藍色:testing accuracy
promblem2
Model architecture :

Dense = (300,relu)
Dense = (300,relu)
Dense = (200,relu)
Dense = (100,relu)
Dense = (7,softmax)

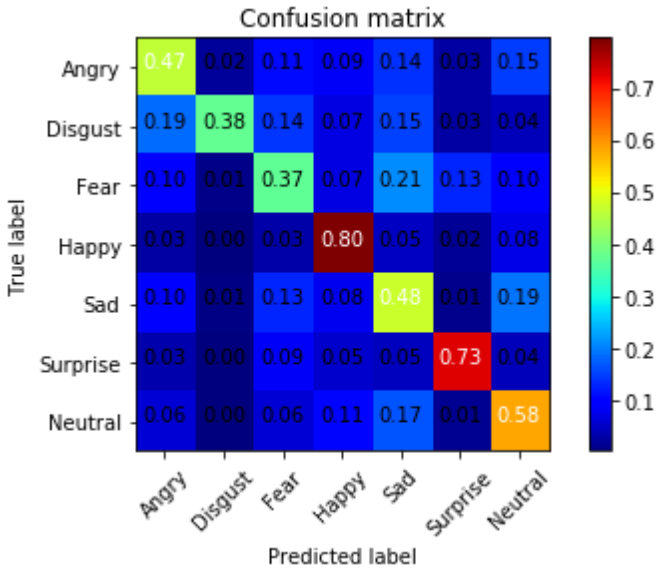
Total params: 862,807
Training Procedure:



比較:

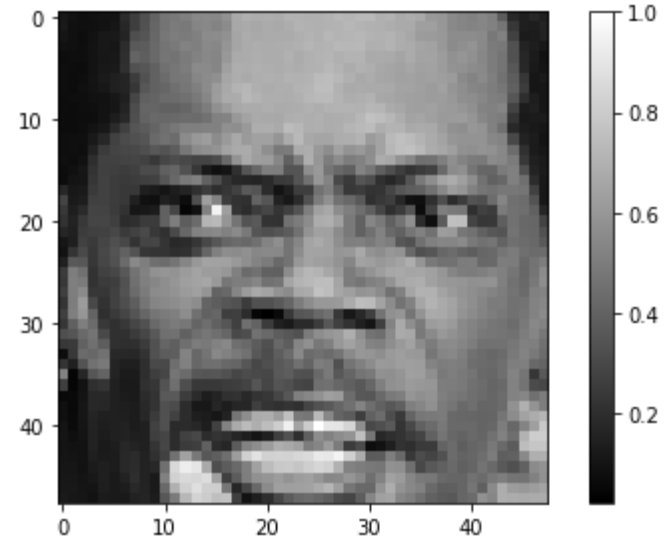
1. convolution 計算較慢。
2. dense 加入dropout 連 training data的正確率都很低，第三個epoch就到局部最小值。
3. dense較不穩定，正確率上上下下。
4. convolution 能更快讓training data正確率達到九十幾%，所以更容易overfiting，dropout很重要。

problem3



觀察:噁心和害怕的正確率很低，也許可以從這裡加強。

4.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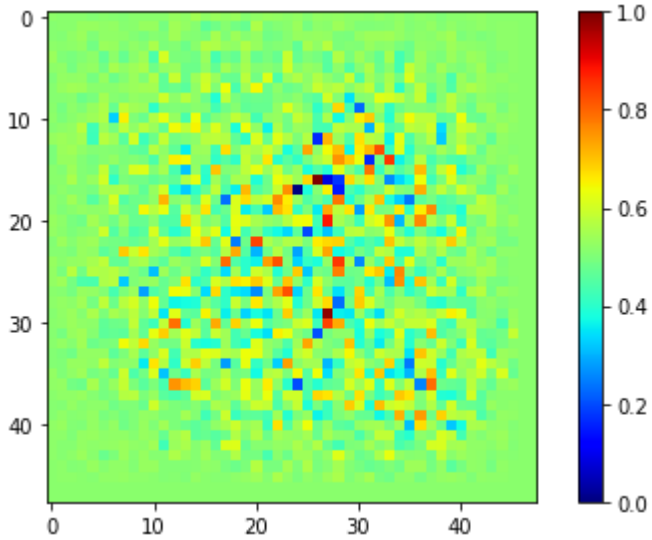
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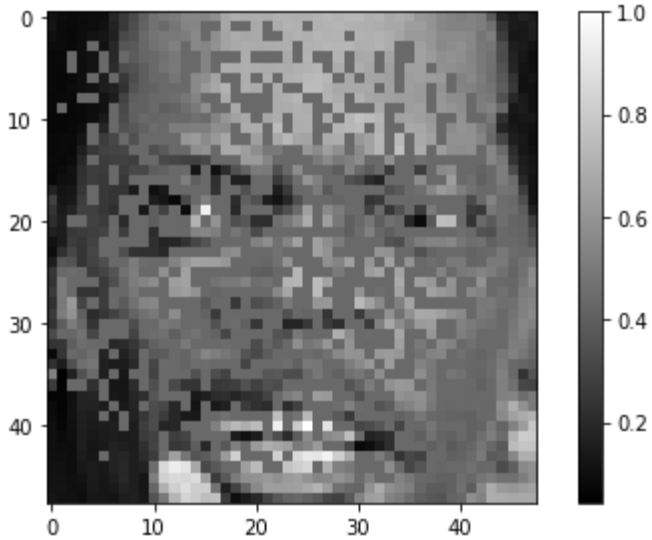
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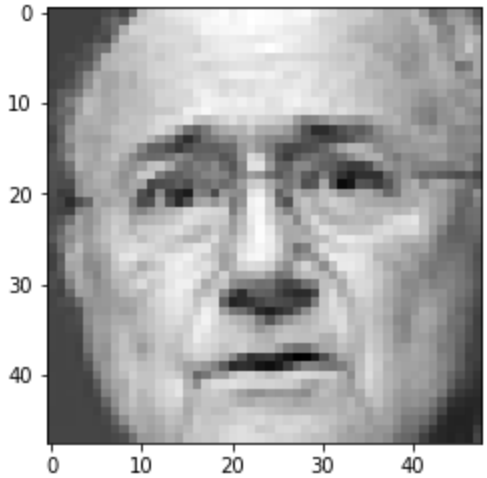
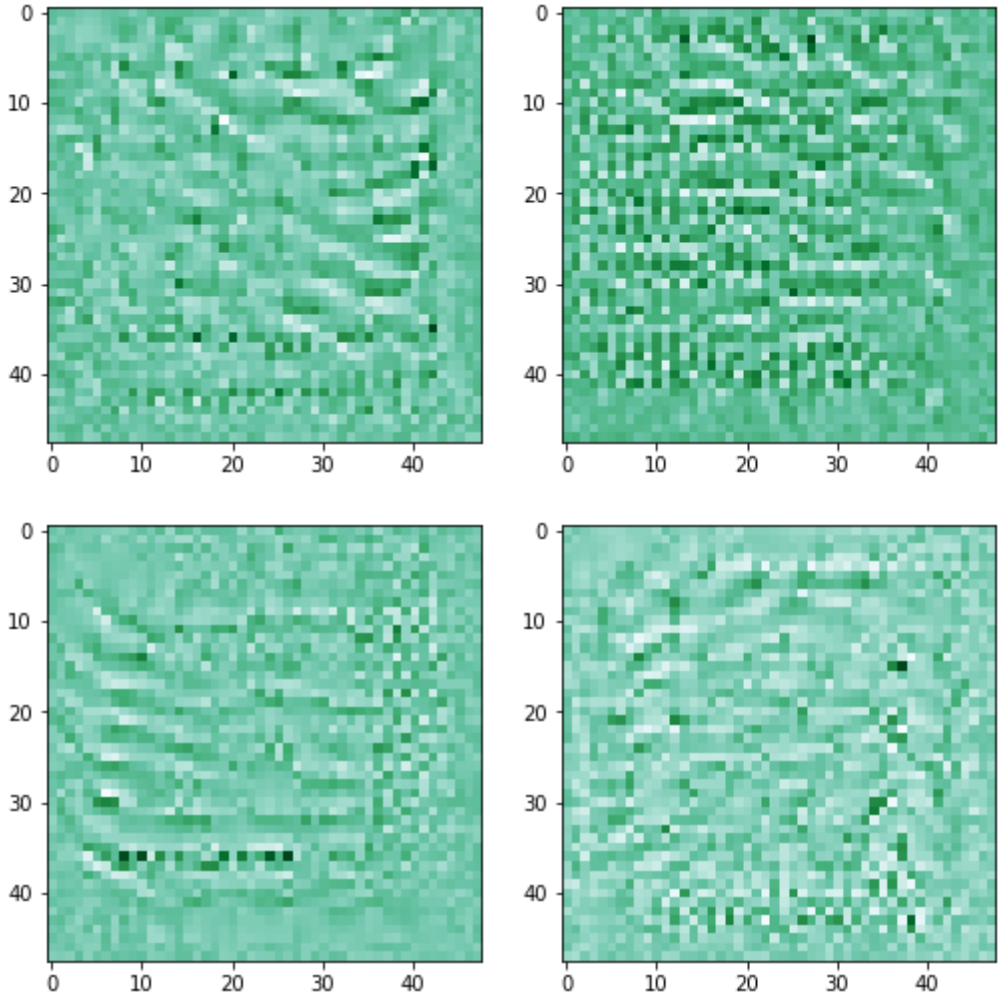
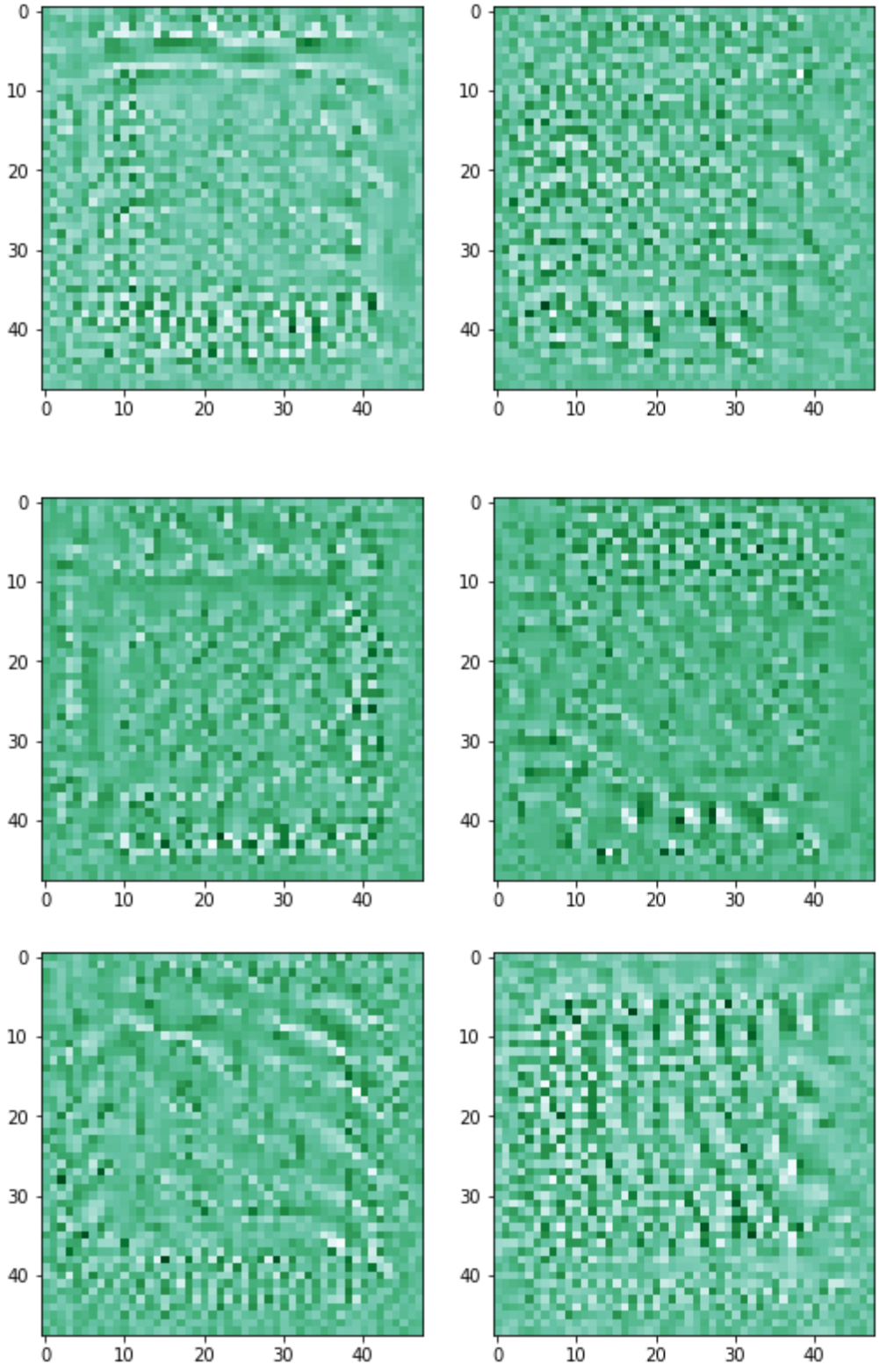
原圖



part1:看最後一層conv , 取前20個filiter。

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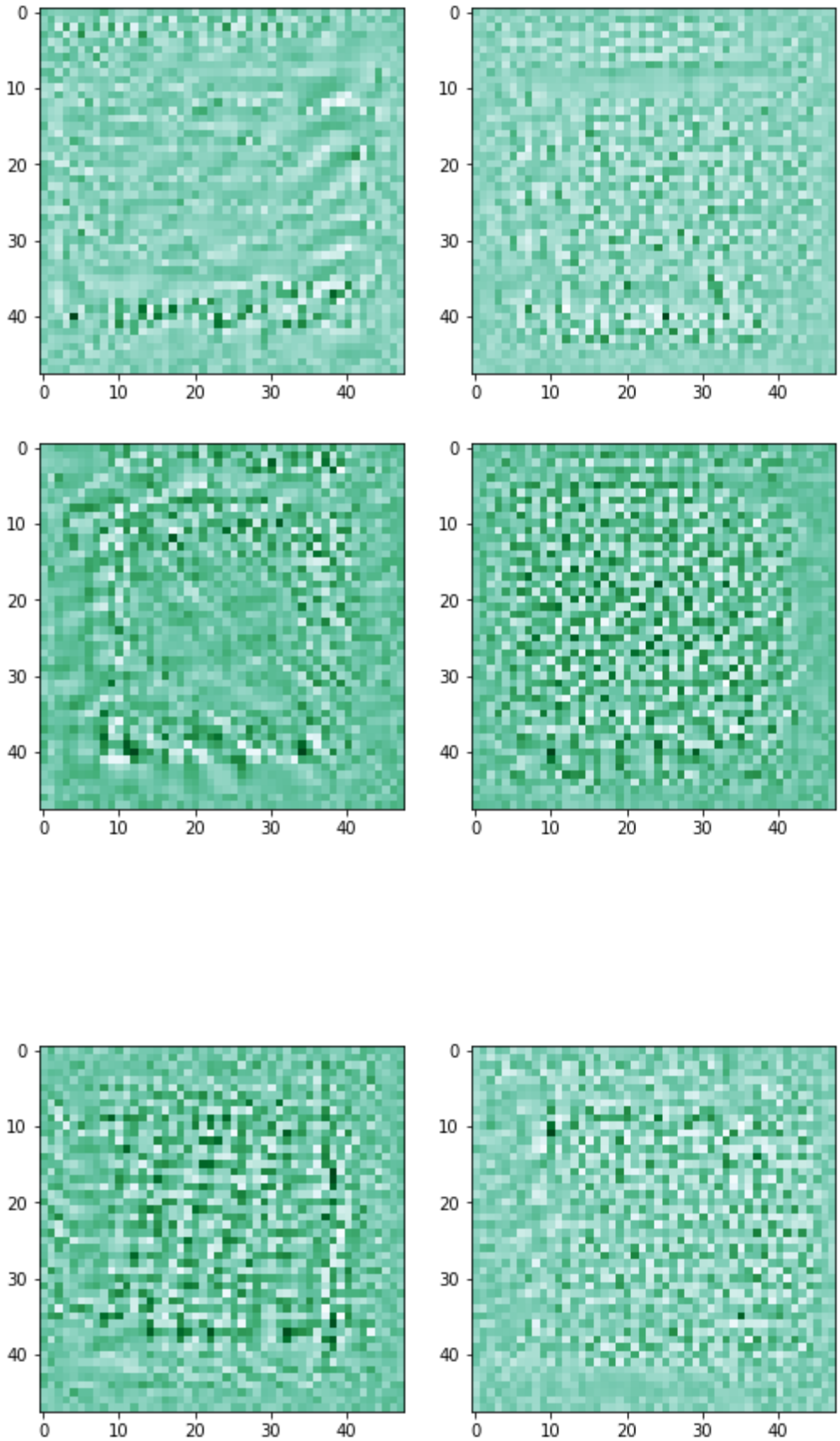
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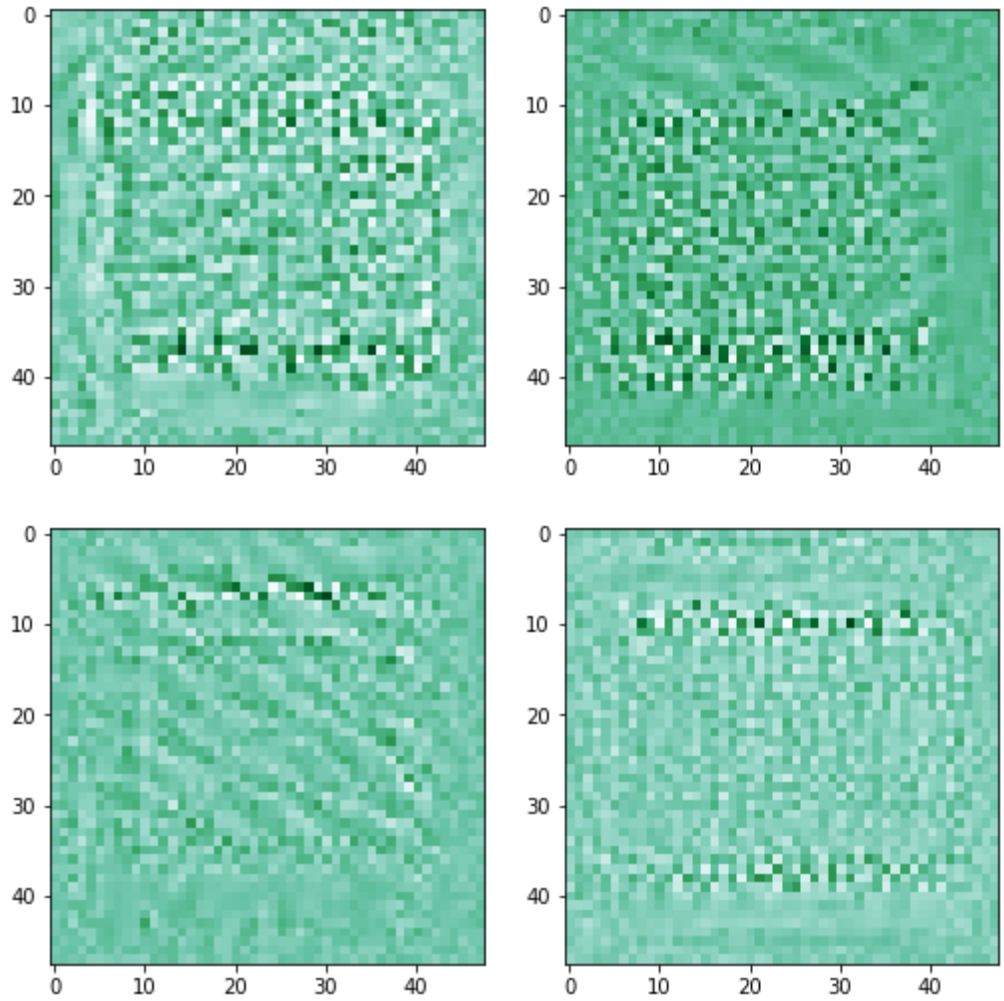
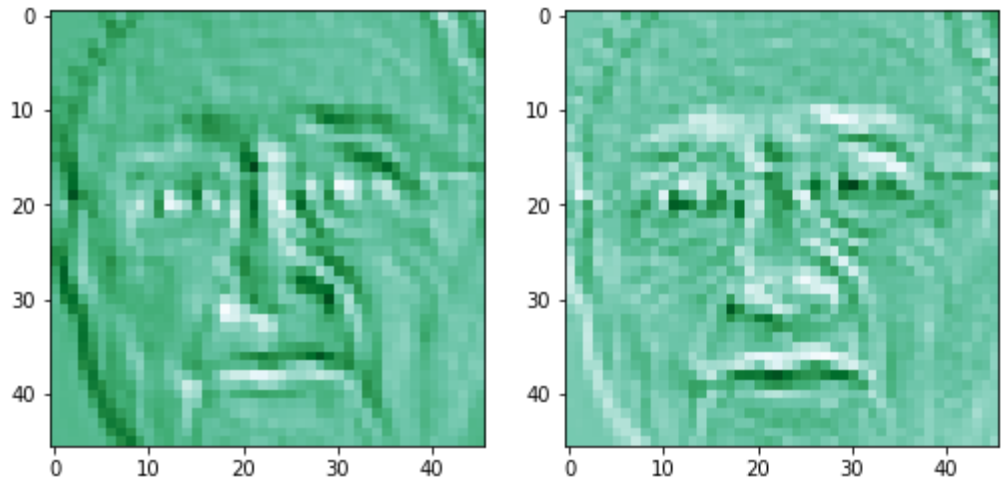
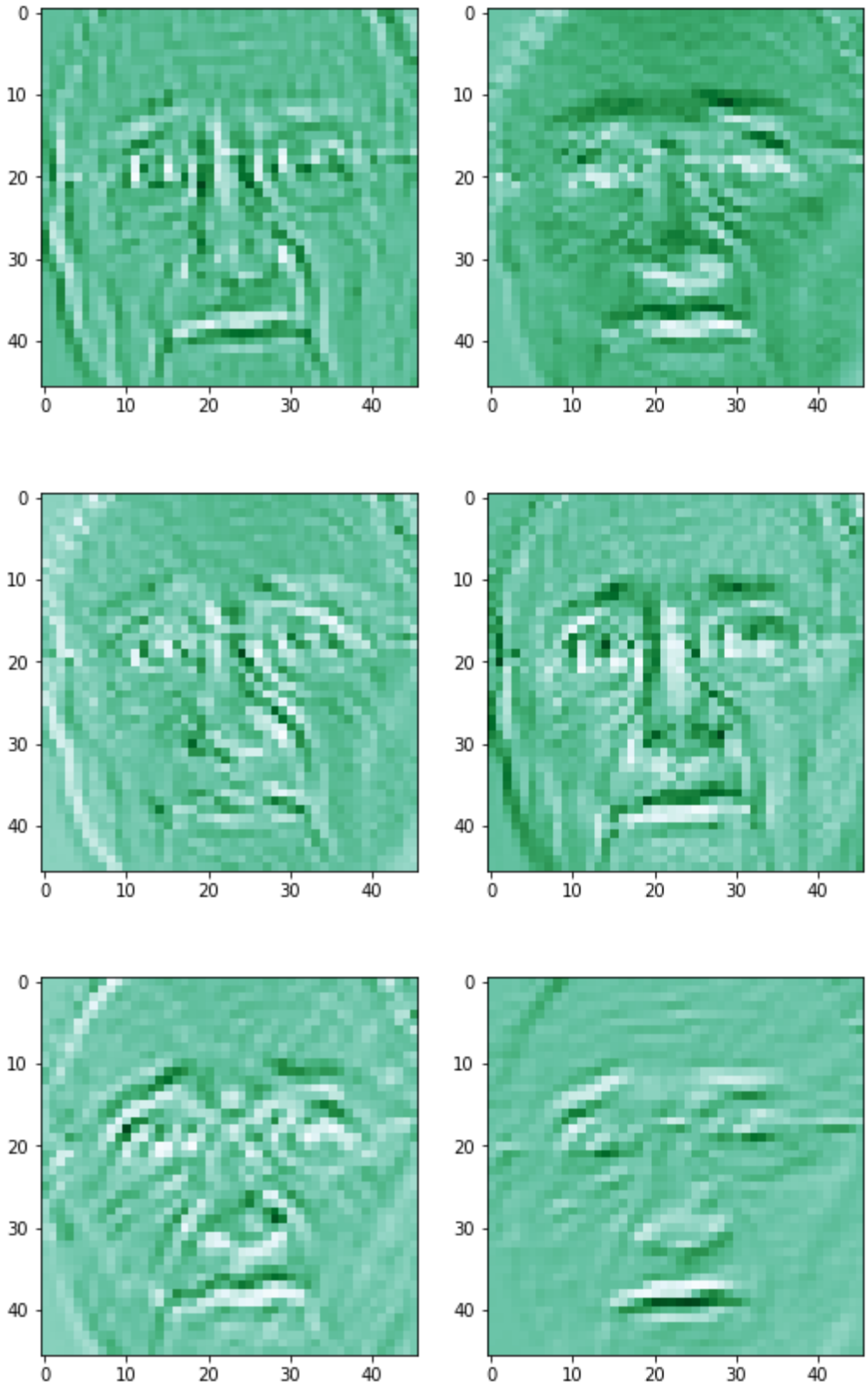


每一個filiter會去檢查一些特定特徵，不過可能因為我的模型正確率不夠高，上圖看不太出來filiter偵測那些特徵。

part2:第一層conv的圖片

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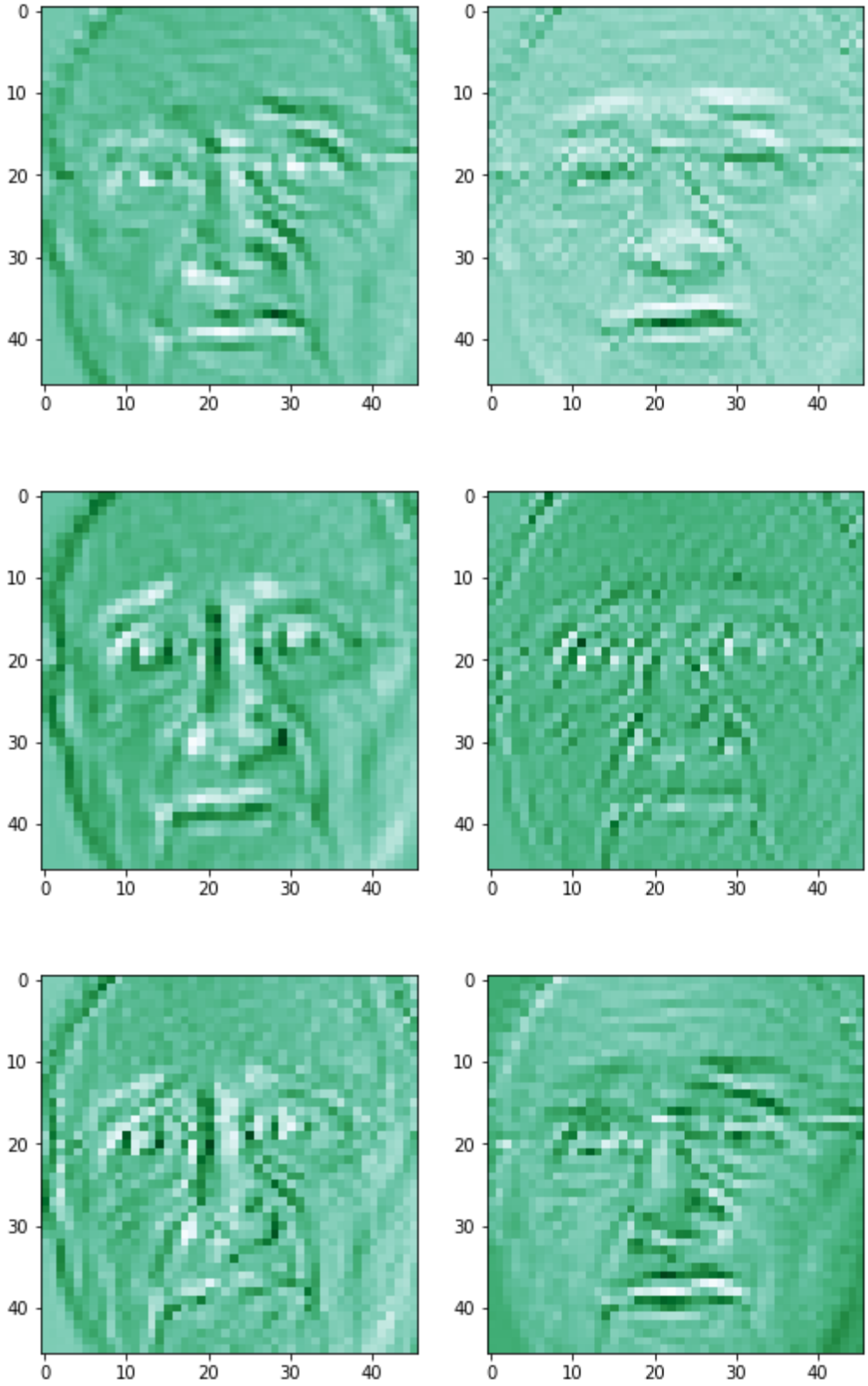
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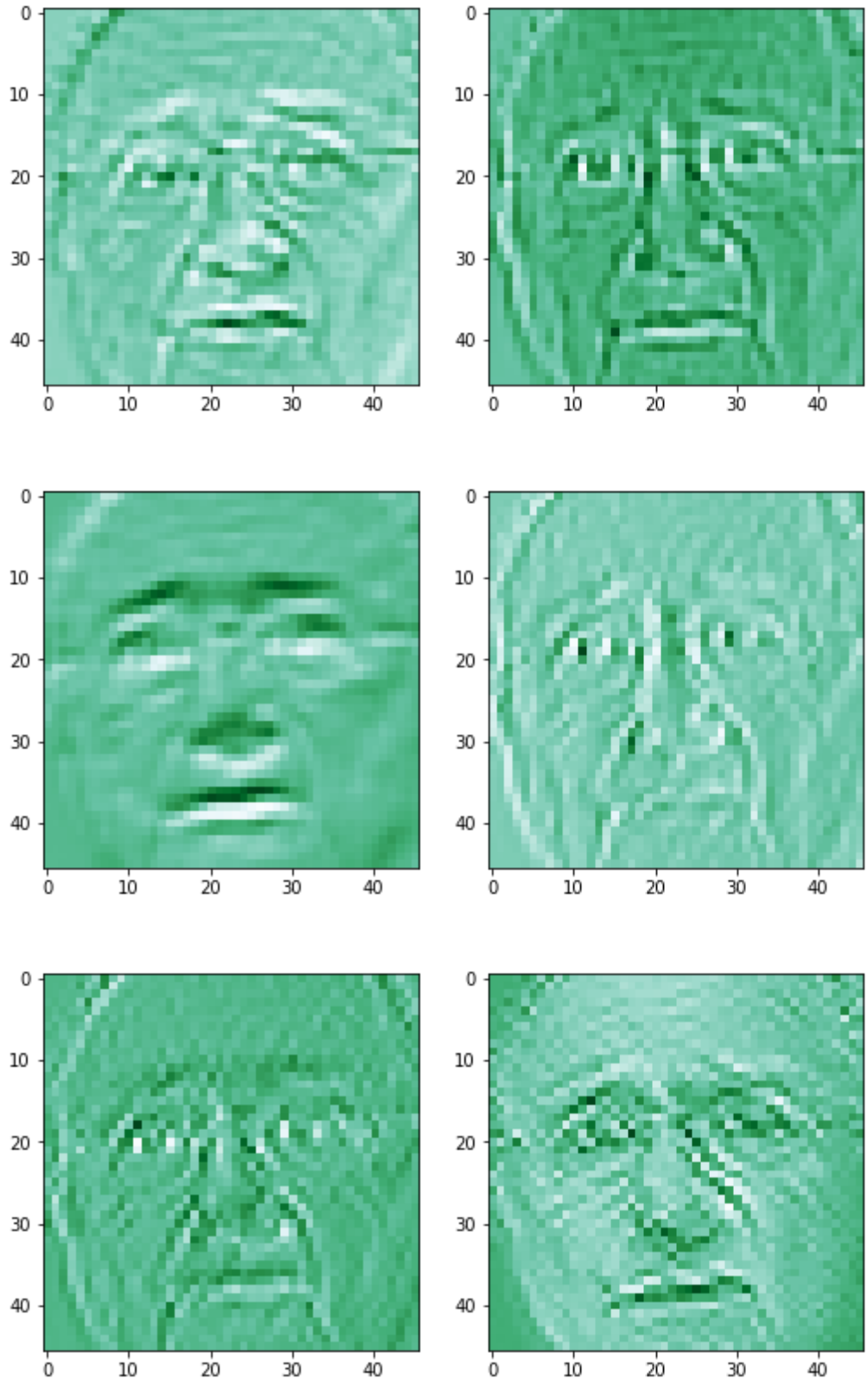

filiter會把圖片中他想要偵測的特徵強化，不想要的弱化，譬如原圖中眼鏡框是不太清楚的，但上面有幾張圖片是可以看到明顯的鏡框