Name: **Ajaero, Emmanuel**
Student ID: **40255606**
email address: emmanuelajaero.ea@gmail.com

- I place each solution in a separate page.

Part 1 (Image Filtering):

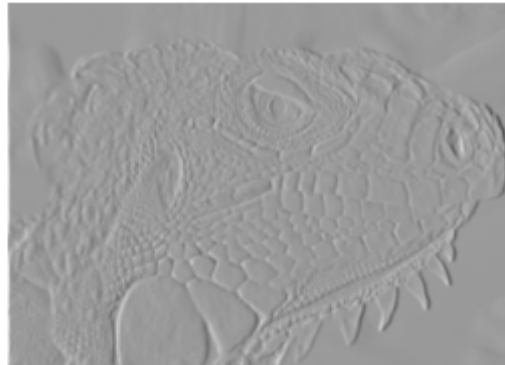# I used Sobel Filter

Partial x

$$
\begin{bmatrix}
-1 & 0 & 1 \\
-2 & 0 & 2 \\
-1 & 0 & 1
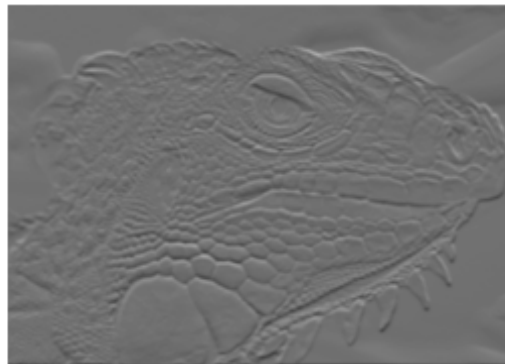\end{bmatrix}
$$

Partial y

$$
\begin{bmatrix}
-1 & -2 & -1 \\
0 & 0 & 0 \\
1 & 2 & 1
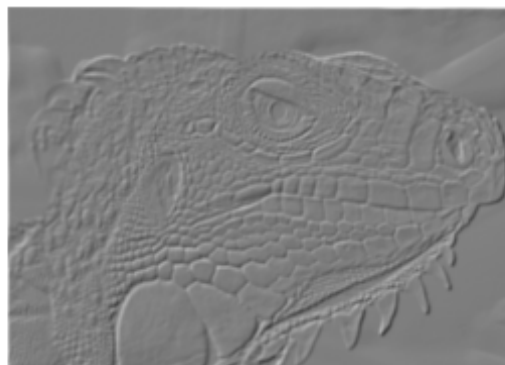\end{bmatrix}
$$

Part 2 (Edge):

x derivative

y derivative

Gradient Magnitude
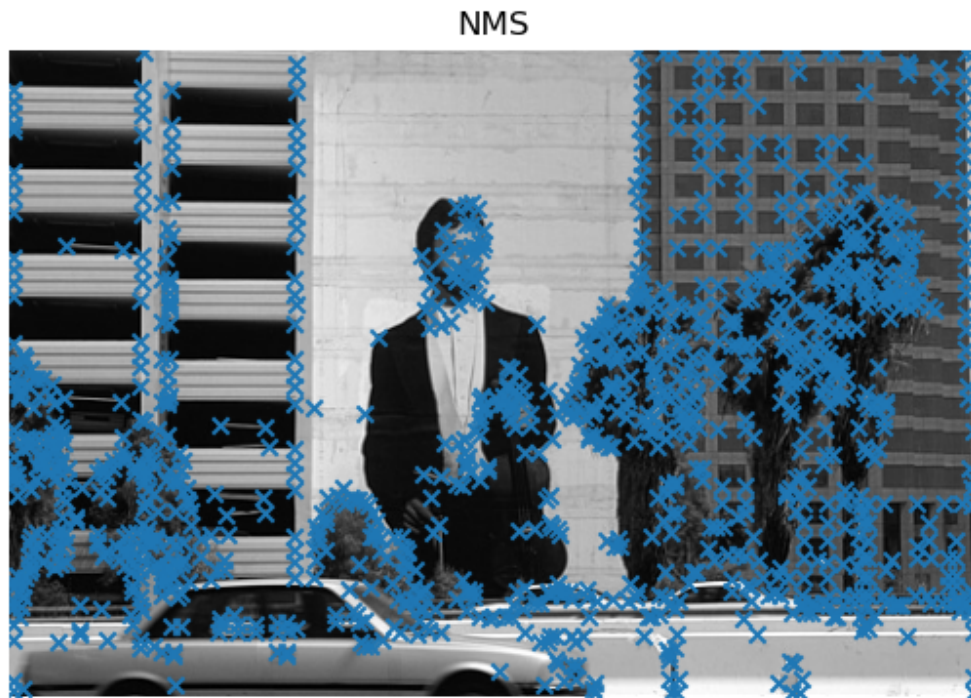
Part 3 (Corner):

Harris Corner Response

Response

Thresh of 0.03125 on the Harris Corner Response

Threshold

NMS Plot on the original Image

NMS

Part 4 (Image Subsampling):