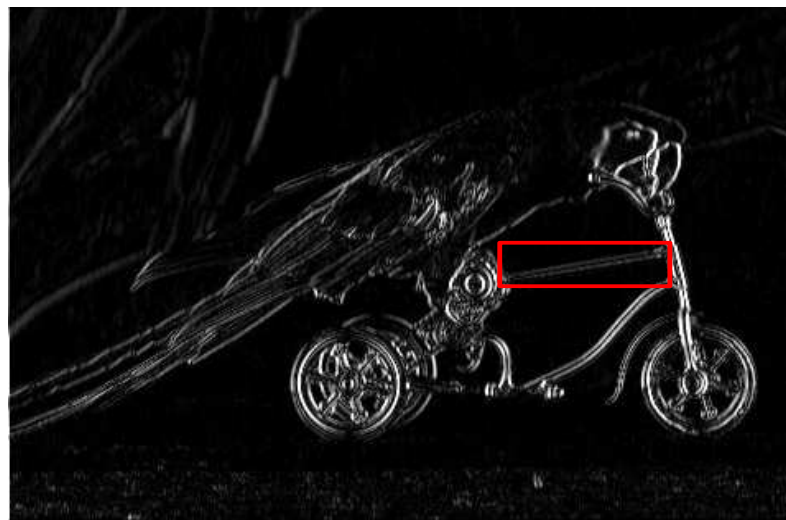


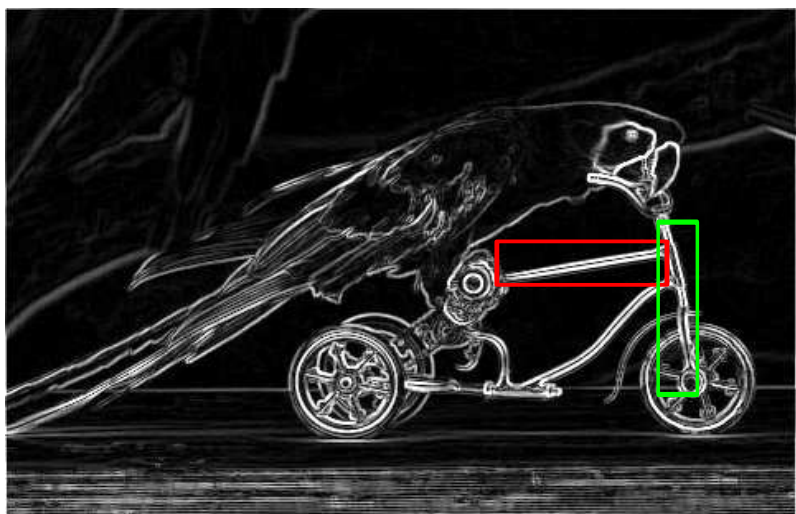
$\underline{\underline{\mathbf{X}}}$ 

$$\underline{\underline{\mathbf{S}}}_1(\underline{\underline{\mathbf{X}}}) = |\underline{\underline{\mathbf{X}}} * \underline{\underline{\mathbf{W}}}_1|$$



$$\underline{\underline{\mathbf{W}}}_1 = \begin{bmatrix} -1 & 0 & 1 \\ -1 & 0 & 1 \\ -1 & 0 & 1 \end{bmatrix}$$

"vertical edges"
feature



$$\underline{\underline{\mathbf{W}}}_2 = \begin{bmatrix} -1 & -1 & -1 \\ 0 & 0 & 0 \\ 1 & 1 & 1 \end{bmatrix}$$

"horizontal edges"
feature

$$\underline{\underline{\mathbf{S}}}_1 + \underline{\underline{\mathbf{S}}}_2$$

$$\underline{\underline{\mathbf{S}}}_2(\underline{\underline{\mathbf{X}}}) = |\underline{\underline{\mathbf{X}}} * \underline{\underline{\mathbf{W}}}_2|$$