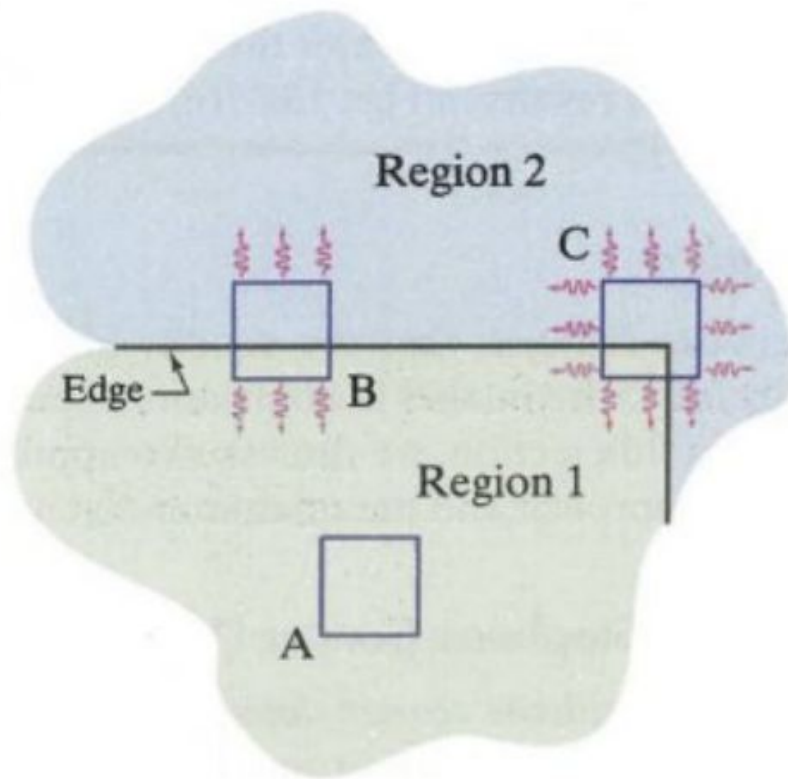


Harris Corner Detector

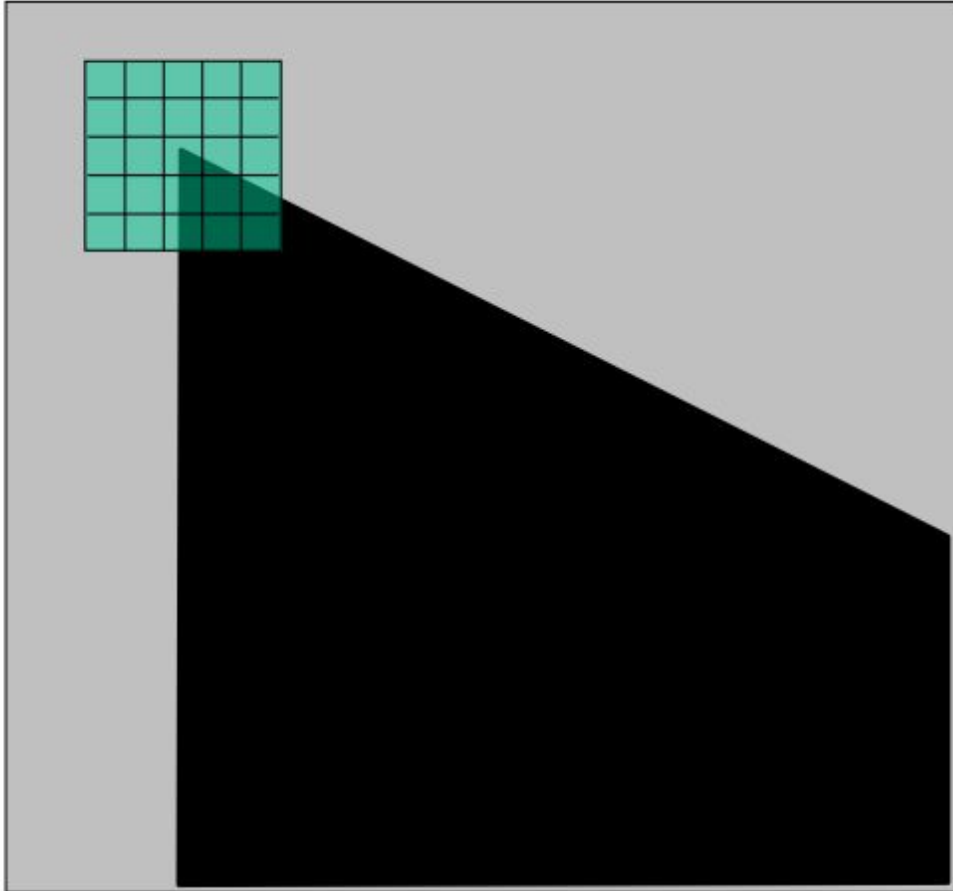
Point Features

- Assim como blobs são regiões de interesse, keypoints são pontos específicos na imagem que podem ser úteis
- São importantes pois normalmente são invariantes à rotações, translações e alterações de luminosidade.
- Utilizados na comparação de imagens, junção de 2 imagens e tracking

Harris Detector - Teoria

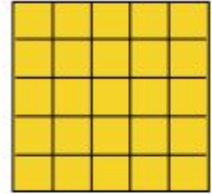


Harris Detector - Teoria



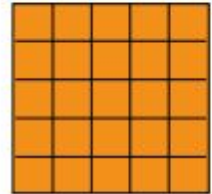
array of x gradients

$$I_x = \frac{\partial I}{\partial x}$$

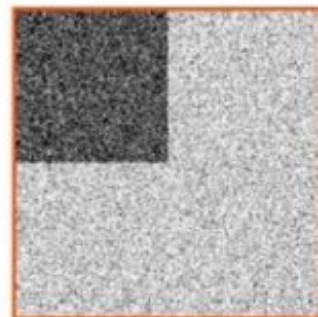
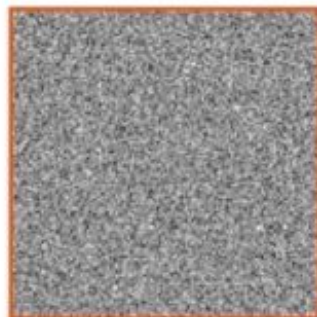
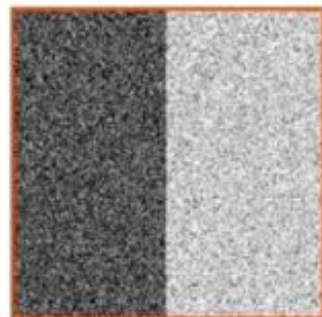


array of y gradients

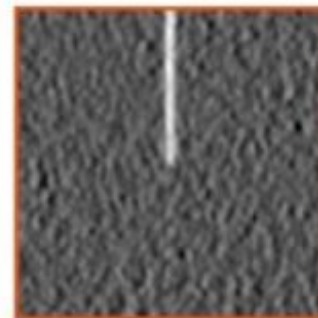
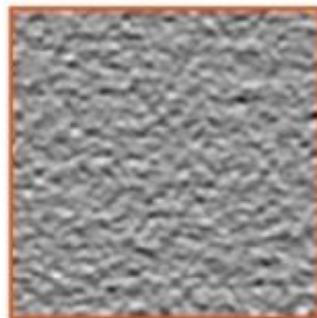
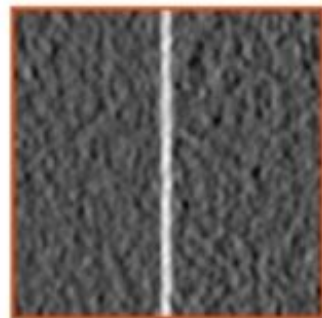
$$I_y = \frac{\partial I}{\partial y}$$



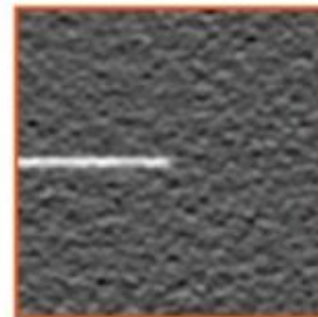
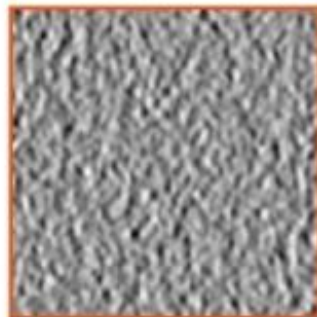
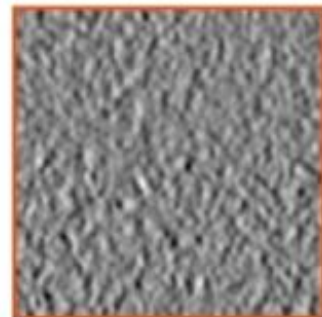
image

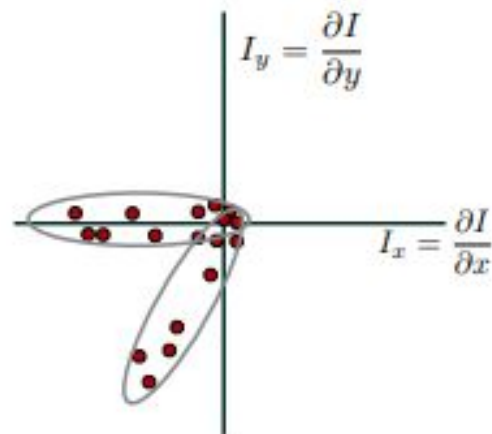
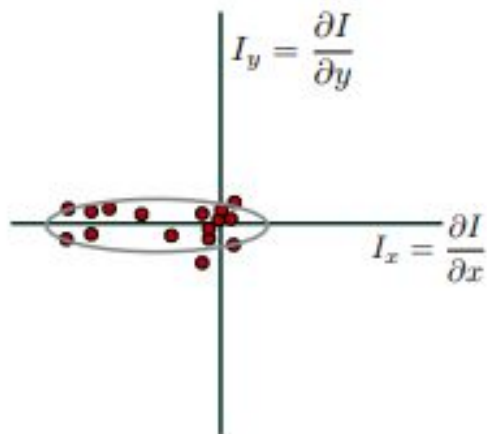
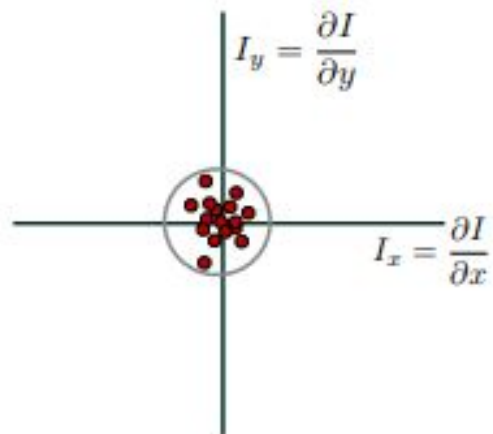
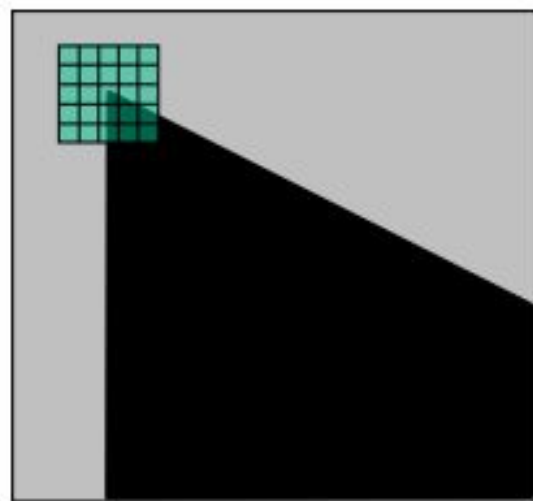
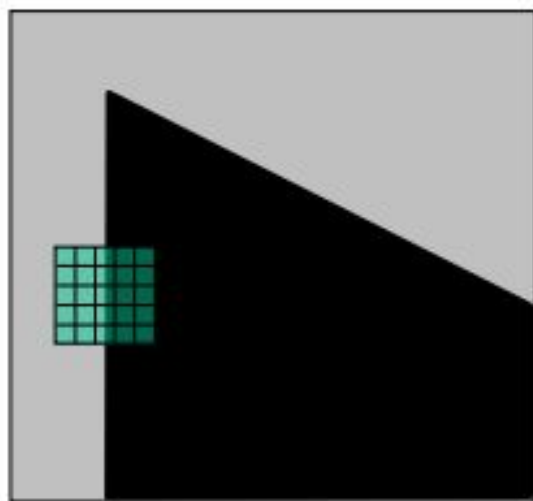
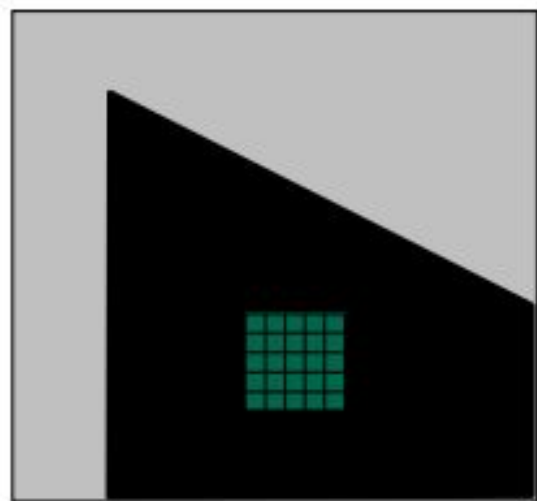


X derivative

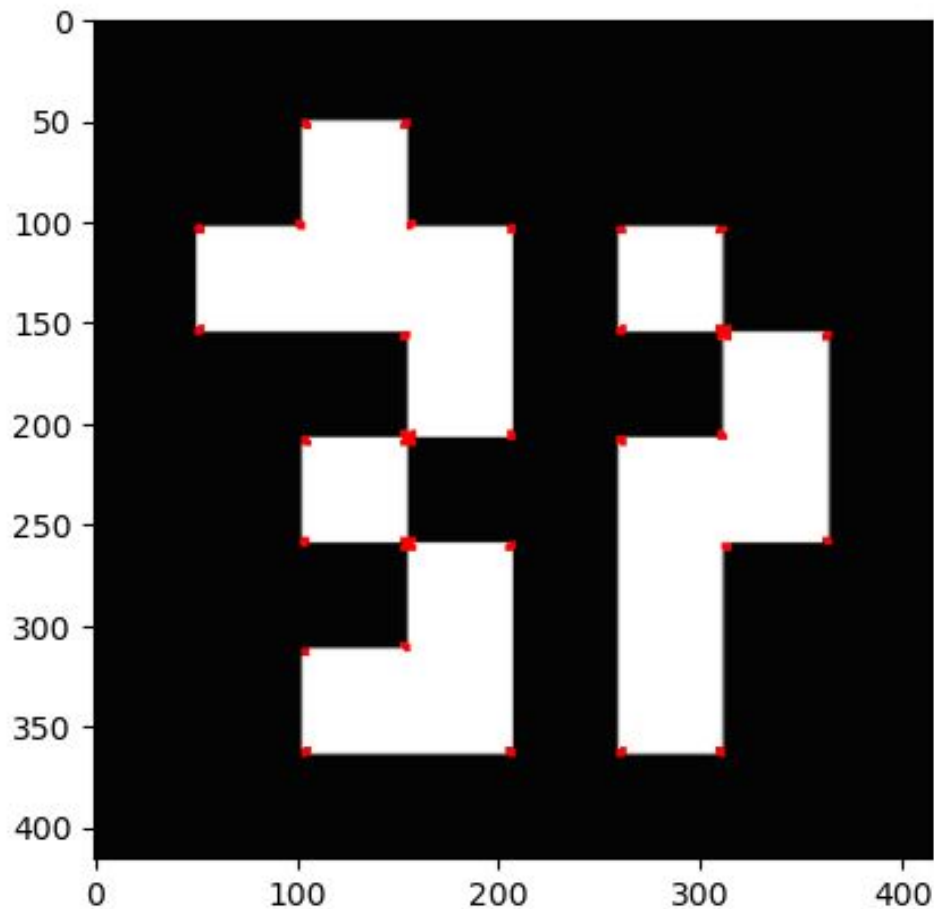


Y derivative

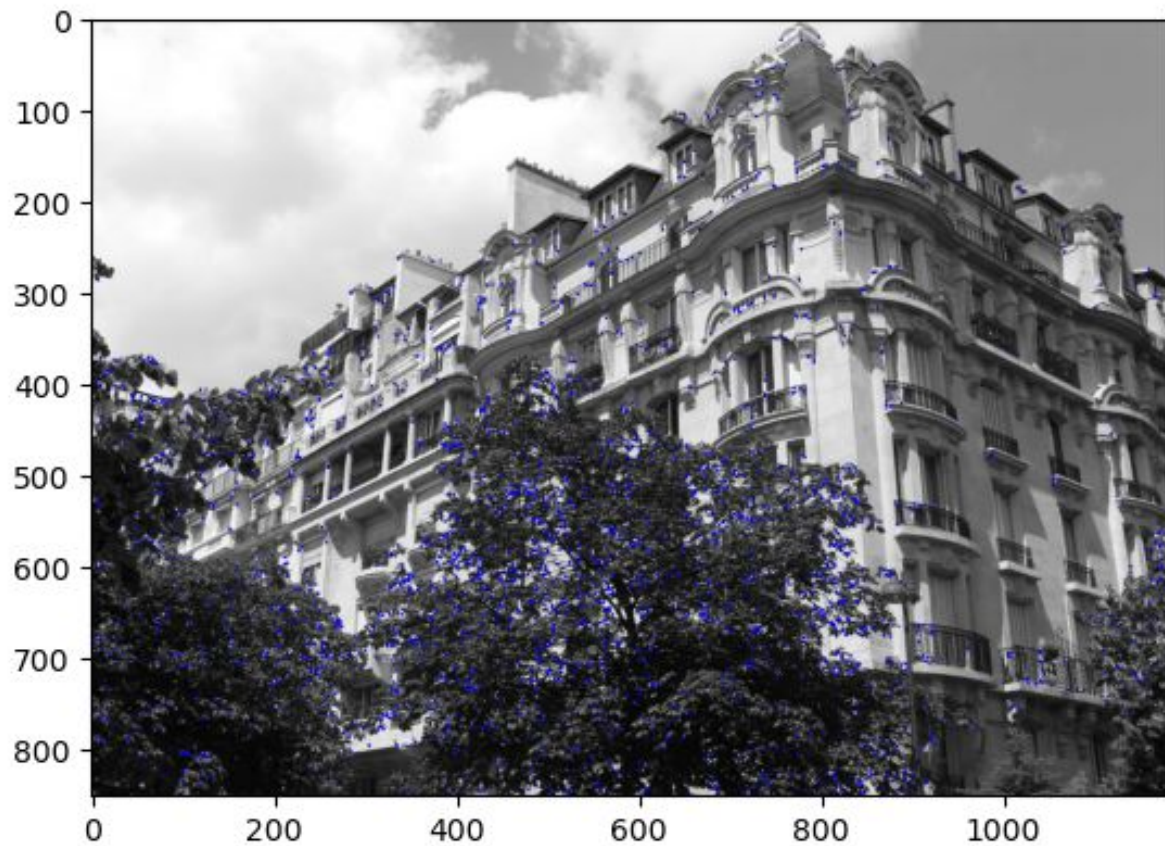




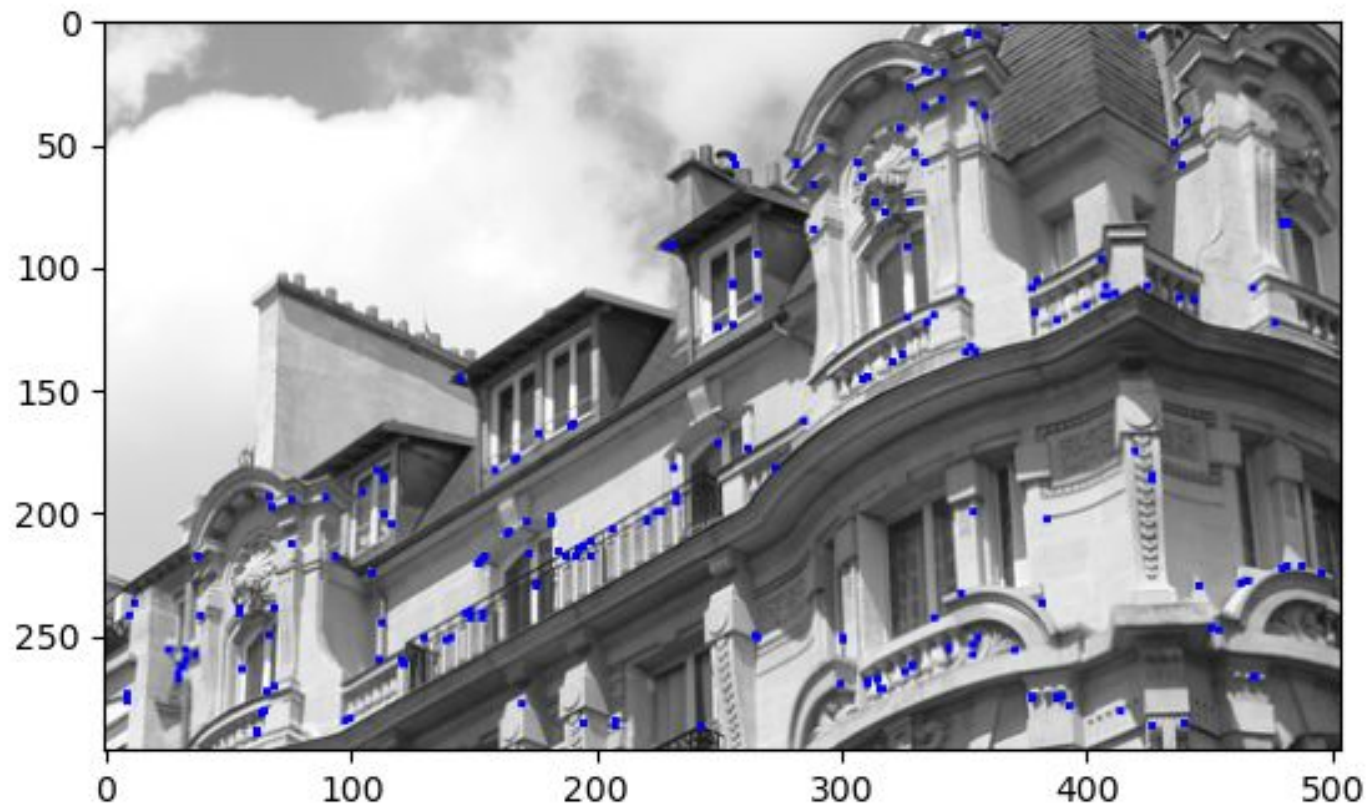
Harris Detector - Resultado



Harris Detector - Resultado



Harris Detector - Resultado



Harris Detector - Discussão

- Limitações

- O detector não é invariável a mudanças de escala. À medida que ampliamos, os gradientes em torno dos pontos de canto se tornam menores. Isso reduz a curvatura da imagem e consequentemente a força do canto.

- Vantagens

- O detector Harris é calculado a partir de gradientes da imagem e, portanto, robusto para variações na iluminação
- Os autovalores da matriz de segundo momento são invariantes à rotação.