Objective: Design an eco-friendly (try your best: as reusable as possible) “smart” business/visiting card (actual hardware) and an associated computer vision application.

Ideas:

Edge and corner detection

Depth estimation

Recognition

Noise reduction using image filtering

Idea:

The business card consists of employee information on the front side and company name on the back side. The employee information includes employee photo, name, job title, email Id, phone number, address and a QR code to redirect to the employee website. The first half of the card will have the picture and the rest of the information will be on the other side. As for the back side it will have the company name and a QR code at the bottom right of the card to redirect to the company website.

QR code recognition can be enhanced using image binarization, image tilt correction, image orientation, image geometric correction and image normalization. This allows images taken in low light or from bad angles to be identified quickly. First initial location is determined using edge detection and projection through image greying, filtering, morphological edge detection, initial projection processing, binary classification through k means clustering, precise positioning using QR features, image rotation, gamma correction and decoding.

QR code

Initial projection positioning

Edge detection

Image filtering

Image greying

Gamma correction and QR decoding

Image rotation

K-means clustering classification

Precise positioning using QR features

Facial recognition can be done using image recognition