Parking Lot classification

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Introduction

• Finding a vacant space in parking lots of large metropolitan areas may frequently become exhausting. Apart from stressful, this challenging task usually consumes considerable time and money. In addition, it contributes to pollute the environment with CO2 emissions.

• Though there are number of solutions based on different technologies, we advocate the use of image/video processing.

• We are using a subset of PKLot Dataset[1] that contains images of parking spaces segmented out from images of parking lots under different weather conditions.

Challenges

• The model should work on significant changes of lightning conditions caused by sunny, overcast and rainy days.

• Selection of features from image.

• The current model does not detect the parking spaces from parking lots. The position of the parking spaces are input manually for with respect to camera position.

Model

Gabor Filters

• Gabor wavelets capture the local structure corresponding to specific spatial frequency, spatial locality, and selective orientation which are demonstrated to be discriminative and robust to illumination and expression changes.

Local Binary Pattern

• LBP is a powerful method of texture description based on statistical analysis and shows its practical use in texture description.

Project Flow

Results

Insert photos of detected image:

Insert Excel charts:

Future Work

Gabor filters with 4 orientations

LBP operator algorithm

Project Flow Diagram

References