Video-based Traffic Sign

Nguyen Hoai An

Ho Chi Minh University of Technology and Education

Motivation

Today AI is a very important area in the development of smart devices, it greatly supports humans in the process of machine intelligence. In particular, AI makes a great contribution to the development of smart cars, one of these applications is used to detect signs on the road. Through these applications, I decided to undertake this project.

Challenges

Standard Traffic Sign

- Perspective/angle
- Color
- Illumination
- Frame
- Low resolution
- Motion blur
- Special charactive
- “False” traffic sign

Method

Read Video

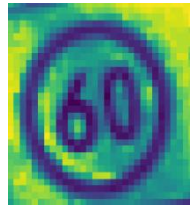
Plate Detection

- Extract by Boundary/Edge
  Vertical edge1
  Edge density
  Boundary ratio
- Extract by Color feature
- Extract by Contours Figure

Template matching:

- Manual made template
- Prerun to test sign
- Peak detection and rejection

Recognition



- Hough Transform to de-skew
- Edge detection to cut noise
- Segment figure

Sub-image correction

Experimental Results

Traffic sign were detected successfully and highlighted. The sub-image is corrected and show as intermediate results. Final result is print and displayed