CAR NUMBER DETECTOR
TEAM

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DESCRIPTION

• PROBLEM
  • Number plate detection

• GOALS
  • Course project goal
    • Model (95% of images)
  • Project goal
    • Gate opening system.
IMAGE PREPROCESSING PIPELINE

• Resize to 1280 x 720 to remove unnecessary noise
BINARY
TOP HAT-TRANSFORM (5X5)

BLACK TOP-HAT

WHITE TOP-HAT
TOP-HAT TRANSFORMATION

IMG - BLACK TOPHAT + WHITE TOPHAT
GAUSSIAN BLUR (5X5)
ADAPTIVE THRESH
FIND CONTOURS
FINDING THE CORRECT CONTOURS

• Applying some math
RESULTS

• Extended our dataset from 30 per char to 270 per char
• Accuracy from 70% to 95.3%
• Every 21\textsuperscript{st} image has an error
  • Missing letter
  • False results (angle around 40-60 degrees):
    • D\texttt{<->}0
    • 8\texttt{<->}B
    • 1 \texttt{<->} 7
WHAT WE LEARNT

• Preprocessing data is really important!!
• OpenCV
• Testing different models
LINK TO FILES

• https://drive.google.com/file/d/1uKCKNHiA0ByJ0hiS1W-5giQ8PrxAwt3E/view?usp=sharing
REFERENCES

• https://homerdiy.com/best-automatic-gate-opener/

• https://www.oneclickroot.com/android-news/resizing-android-apps-on-chromebooks/