Idea :

License Plate Characters have one really distinct feature (atleast in the European area) : they are black and therefore much different from their surrounding area

Ein Bild, das Text, Screenshot, Schrift, Zahl enthält.

KI-generierte Inhalte können fehlerhaft sein.

Even in blurry images, they still are distinguishable Ein Bild, das Farbigkeit, Verschwommen, gelb enthält.

KI-generierte Inhalte können fehlerhaft sein.Ein Bild, das Text, Uhr enthält.

KI-generierte Inhalte können fehlerhaft sein.

Therefore, we propose the following approach to figure out the characters :

* Convert to LAB color space (this is such we can use the lightness channel of LAB, since the black letters will be at 0 and therefore clearly distinguishable
* Use adaptive thresholding and keep block size and the constant substracted from the mean as adjustable parameters for user, so he can find the perfect “input” (I think mean will help to remove some noise and block size helps find the correct size such that the characters are best recognizable)
* This will help us to get a more “recognizable” image already, i.e. Ein Bild, das Screenshot, Schwarzweiß enthält.

  KI-generierte Inhalte können fehlerhaft sein.Ein Bild, das Text, Screenshot, Design enthält.

  KI-generierte Inhalte können fehlerhaft sein.
* But more importantly, this should help with now automatically separating the characters using contours
  + We will keep the relative geometric information about where these letters were found in the image : in this way, we can also extract the single characters from the initial blurry image input , because maybe we can use them
* These single characters then range from A-Z and 0-9
  + To recognize these now, we use them as single inputs to..
    - Either a classification CNN, trained on digits 0-9 and English characters A-Z
      * Here the input sizes need to be adjusted to the size of the training/val/test data
      * Also padding so we get the input data (characters) centered
      * And also inversion of colours (as we train on a dataset that has black characters, white background)
      * We use some online dataset for training or find a pre-trained model, .
    - Or some overlaying algorithm, which just simply overlays all numbers 0-9 and letters A-Z over the character to be classified and finds the closest match (but here problems such as how big does the character need to be, different fonts etc. , so CNN approach is probably better)