Pattern Recognition

Presented By

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Presented To

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Title

Alphanumeric character recognition using Ncc (
Normalize cross correlation) or Template
Matching.

- Alphanumeric characters are those in layouts meant for English language users that are made up of the combined set of the 26 alphabetic characters, A to Z, and the 10 Arabic characters, 0 to 9.
- In this slide, I am talking about A to Z characters.

Goal

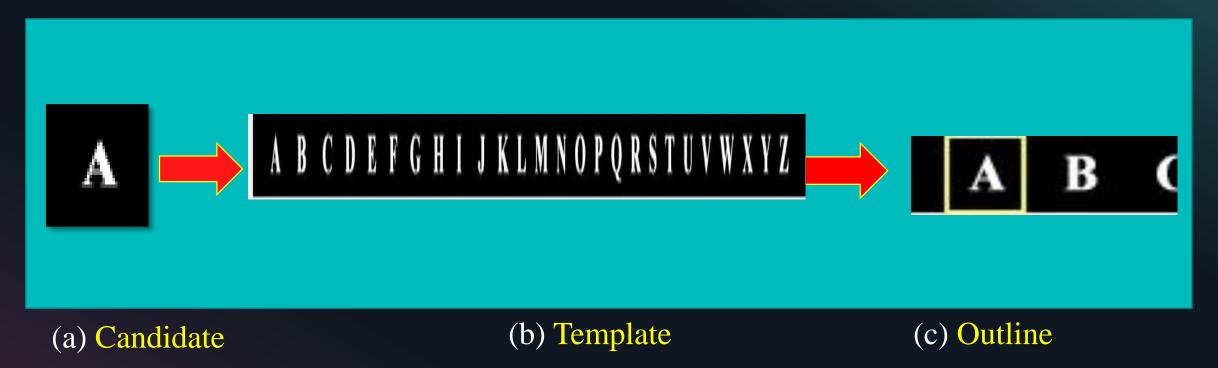


Figure: Processing example of alphanumeric character recognition.

Goal

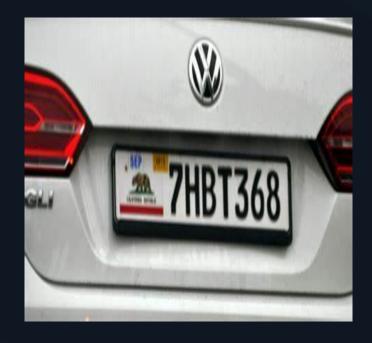
- ☐ In figure (a), first I choose a Letter A which is called candidate.
- Then I choose Template where's my all character's are presents shown in figure (b).
- Then in figure (c) we can see that candidate A with matched with template A.

Motivation

- ☐ To learn a method which is recognize numeric characters.
- To Recognize alphabets by using normalize cross correlation.
- To learn how to match a character from a dataset.

Applications







NID card

License Plate

Bank Check

Figure: Examples of Character recognition applications.

Challenges

- ☐ Uneven Size.
- ☐ Real time recognition.
- ☐ Geomatrical Distortion.

Propose Framework

Character recognition Segmented plate characters Normalizing by size Candidate and template characters Candidate alphanumeric characters Measuring the similarity ABCDEFGHIJKLMNOPQRSTUVWXYZ **Templates** Best matches{ NCC res } Recognition results

The Proposed Character recognition scheme

Processing Example

- ☐ First I read candidate and template file.
- ☐ Then I show the figure of both candidate and template.
- ☐ Then we convert rgb to gray by using rgb2gray function in matlab.
- ☐ Then we convert gray to binary.
- ☐ Then use ncc I find the template match with the candidate.
- ☐ In array i sort the value of ncc and find the maximum value of matched characters.

Conclusion

- In this project by using ncc we recognize alphanumeric characters.
- □ NCC's Merit
- ✓ Simple and easy to implement.
- □ NCC's Demerit
- ✓ Take long computation time

Reference

https://images.search.yahoo.com/search/images

Thank You