

Learning representations by back-propagating errors

Presenter: Qirong Shen, Mingyu Zhou, Zimeng Wang, Qian Liu, Junzhe Wen

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What is the problem that you will be investigating?

Why is it interesting?

- The topic we hope to investigate is a vision-guided garbage sorting robotic arm based on machine learning, which achieves automated classification and sorting of garbage. We are interested in this topic because we hope to combine our knowledge of machine learning, visual information, robotic arm control, and simulation environment construction, and fully utilize the knowledge we have learned in our courses to create a project with practical application value.

What data will you use?

Collect data from web

- Kaggle dataset

- <https://www.kaggle.com/datasets>

- Github dataset

- <https://github.com/>

Input Data

one-indexed-files-notrash_test.txt (6.77 kB) ↓ >

About this file

Test datasets encoded from 1 to 6.

glass373.jpg 1
plastic125.jpg 4
cardboard304.jpg 3
metal159.jpg 5
glass429.jpg 1
paper286.jpg 2
cardboard290.jpg 3
plastic103.jpg 4
cardboard92.jpg 3
paper113.jpg 2
paper346.jpg 2
cardboard372.jpg 3
glass173.jpg 1
trash44.jpg 6
plastic328.jpg 4
cardboard125.jpg 3
plastic305.jpg 4
metal18.jpg 5

spotgarbage removed the readme from inside the directory 742015c on Nov 14, 2017 4 commits

spotgarbage removed the readme from inside the directory 6 years ago

README.md Update README.md 6 years ago

README.md

spotgarbage-GINI

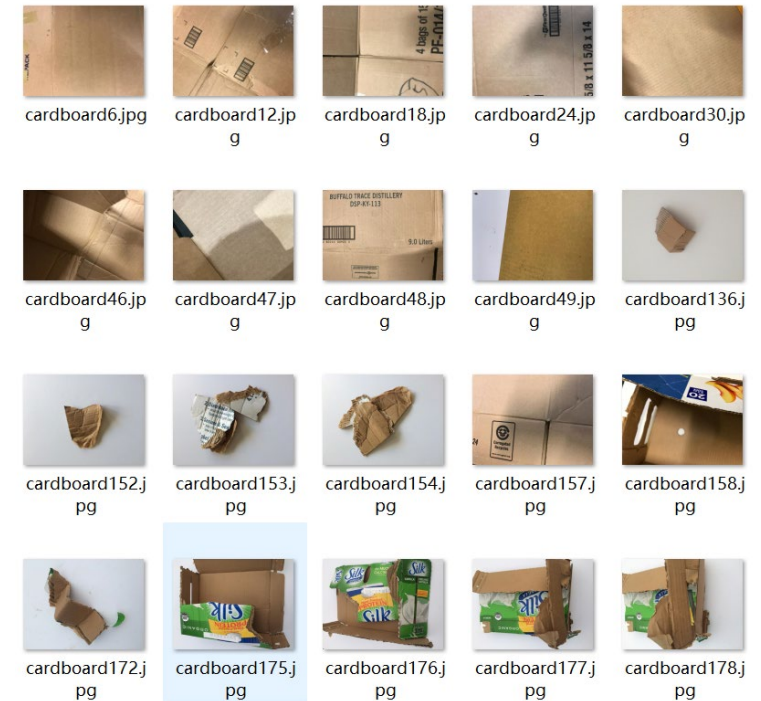
Garbage In Images (GINI) Dataset

Contents

1. garbage-queried-images.csv - List of images crawled using garbage related queries. Each image has the following attributes: image,query,label,startX,startY,endX,endY
2. non-garbage-queried-images.csv - List of images crawled using non-garbage related queries. Each images has following attributes: image, query.
3. garbage-queried-images-spotgarbage.csv - List of garbage queried images using in the SpotGarbage paper.
4. ambiguous-annotated-images.csv - List of garbage queried images ambiguously annotated by users.

Input (43.4 MB)

- Data Sources
 - Garbage Classification
 - one-indexed-files-notr.
 - one-indexed-files-notr.
 - one-indexed-files-notr.
 - one-indexed-files.txt
 - zero-indexed-files.txt
 - zero-indexed-files.txt

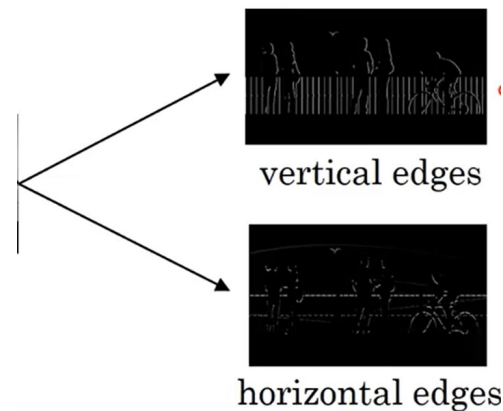
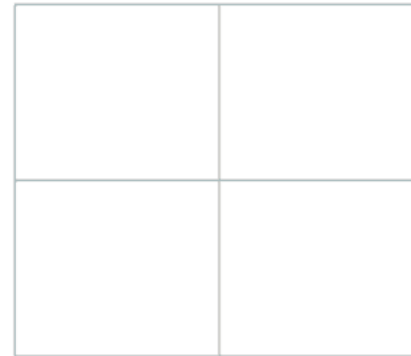
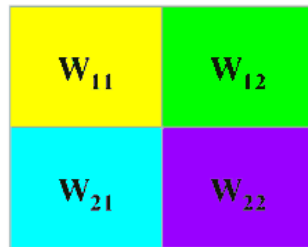


What method or algorithm are you proposing?

CNN (Sampling, Pooling etc)

Convolution

X_{11}	X_{12}	X_{13}
X_{21}	X_{22}	X_{23}
X_{31}	X_{32}	X_{33}

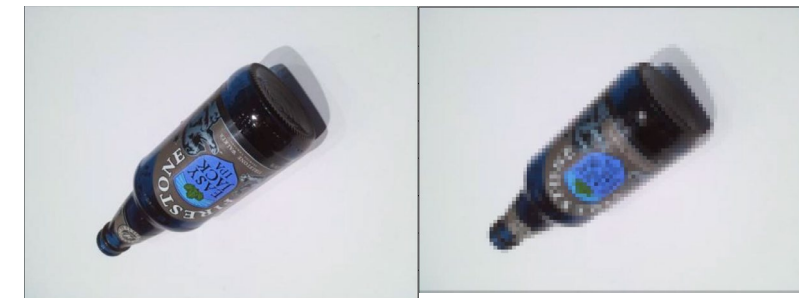
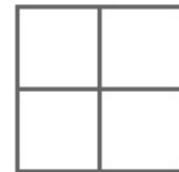


Pooling

Feature Map

6	4	8	5
5	4	5	8
3	6	7	7
7	9	7	2

Max-Pooling

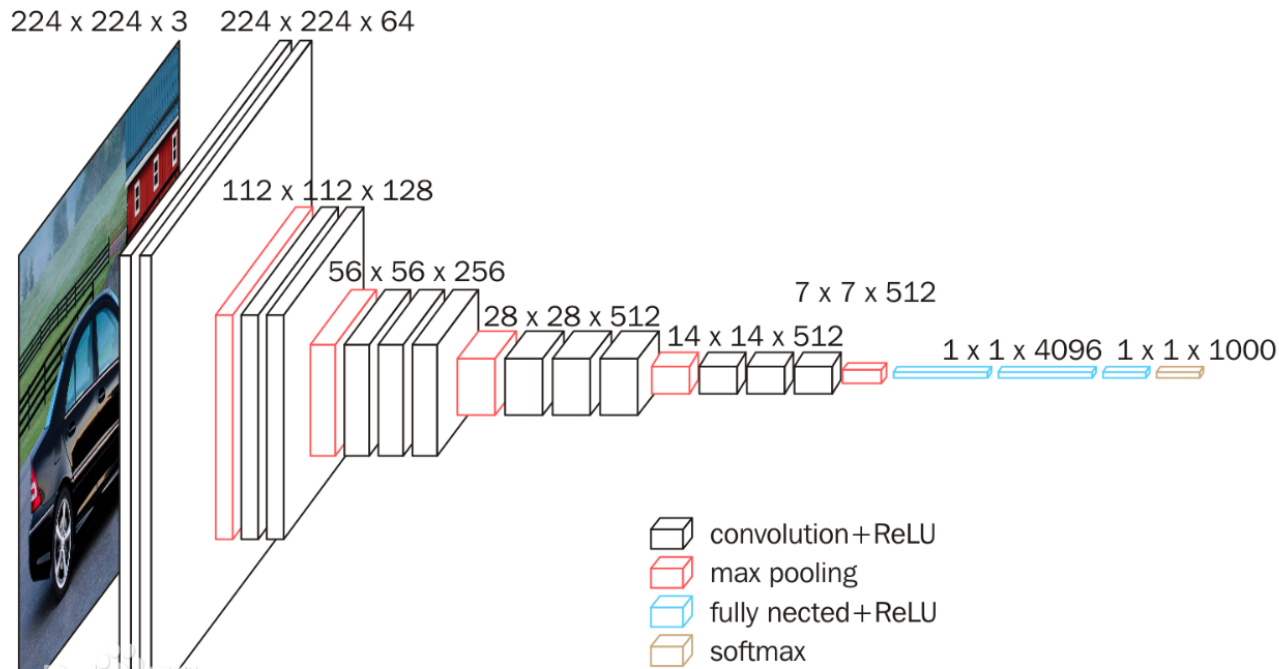


What method or algorithm are you proposing?

CNN (Sampling, Pooling etc)

Convolution Neural Network

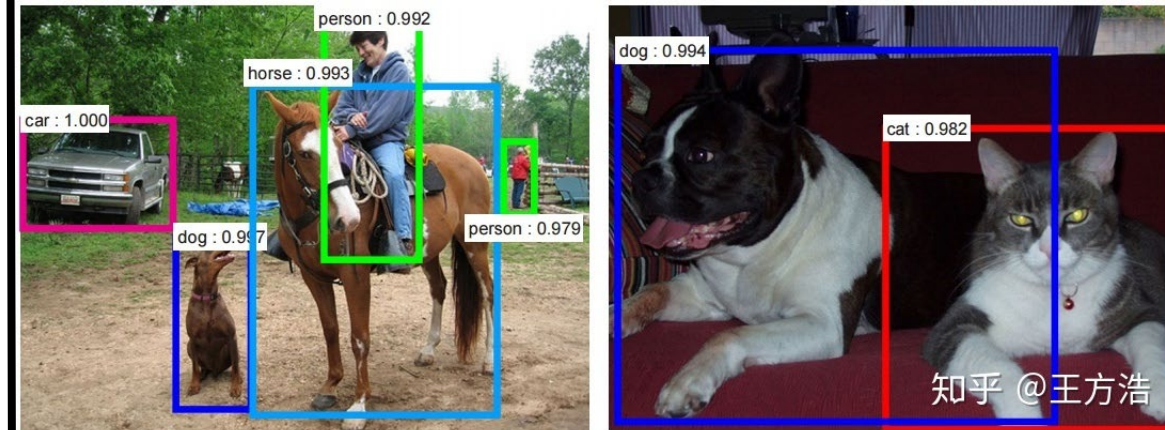
Deep Machine Learning Network



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Yolo

Fast Object Detection



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How will you evaluate your results?

Qualitatively, what kind of results do you expect (e.g., plots or figures)? Quantitatively, what kind of analysis will you use to evaluate and/or compare your results (e.g., what performance metrics or statistical tests)?

60%	70%	80%	90%	100%	120%
Only the machine learning training part is completed, and there are few cases of garbage classification, which cannot be simulated	After completing the machine learning training part, there are few garbage classification cases, and the simulation cannot fully achieve the desired effect	After completing the machine learning training part, the garbage classification is less, and the simulation can be completed as expected	After completing the machine learning training part, there are many garbage classification situations, and the simulation can be completed as expected	After completing the machine learning training part, there are many garbage classification situations. The simulation can be completed as expected, and other basic functions can be added	Try testing on real machines based on simulation or add other more challenging features

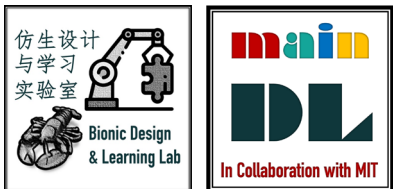
Thanks for listening

Name: Qirong Shen, Mingyu Zhou, Zimeng Wang, Qian Liu, Junzhe Wen

Affiliation: SUSTCH

Supervisor: Chaoyang Son

Contact: 12010311@mail.sustech.edu.cn



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