University of Information Technology

Final year project

The Project Name goes here

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January 11, 2018

Acknowledgments

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Abstract

In real world, materials have rich surface texture, geometry, lighting conditions, and clutter, which combine to make the problem more challanging.

1 Introduction

In recent years, material classification has become an active topic for reseachers with the main goal is providing the detail of material information for a vareties applications such as Advanced Driver-Assistance Systems (ADAS) [1], robotic manipulation [2], robotic navigation [3], etc.

Figure 1: Bottles with similary shapes, are made of diffrenet materials which decides its physical properties, which could be extremely useful information in various situations.

Material of surfaces contribute valuable informations to understand the whole image. For example, Figure 1 shows that with infomation about material which thoses bottles make of, computer could sort those bottles by weights, make a decision to choose which one is good to hold hot water or even know that it would be a risk to allow people bring a glass bottle which could be used as a weapon into a meeting between head of states.

Previous works on material classification are focused on ... (some previous works here). In this paper, we suggest a ... (summary our work here).

2 Related Work

3 Dataset

4 Methods

5 Experiments

5.1 Base line

Material classification with VGG-16 and SVM

6 Conclusions

7 References

[1] H. Lay, *Toyota to add wrong way driving alert to navigation systems, autoguide.com news*, 2011. [Online]. Available: `http://www.autoguide.com/auto-news/2011/05/toyota-to-add-wrong-way-driving-alert-to-navigation-systems.html`.

[2] M. W. Spong, S. Hutchinson, and M. Vidyasagar, *Robot modeling and control*. Wiley New York, 2006, vol. 3.

[3] J.-H. Kim, E. T. Matson, H. Myung, and P. Xu, *Robot Intelligence Technology and Applications 2012: An Edition of the Presented Papers from the 1st International Conference on Robot Intelligence Technology and Applications*. Springer Science & Business Media, 2013, vol. 208.

8 Appendices