Distortion-Adaptive Grape Bunch Counting for Omnidirectional Images Ryota Akai¹, Yuzuko Utsumi¹, Yuka Miwa², Masakazu Iwamura¹ and Koichi Kise¹ Graduate School of Engineering, Osaka Prefecture Univerisity, 2 Research Institute of Environment, Agriculture and Fisheries, Osaka Prefecture

apples, oranges















Generated density map

DExperimental results



Overview of the Proposed Method: Prediction



Contribution (2) Data Augmentation



Conclusion

DAim of the research **D**Automatic bunch counting for support grape farmers' bunch pruning task

- Contributions

 - Stereographic images
- **D**Experimental results
 - accuracy

- (1) : Stereographic image
- (2) : Alignment
- (3) : Adaptive Gaussian kernel

Accuracy is improved by **14.7%**



1. Using Stereographic images for object counting 2. Proposed a data augmentation method for Proposed adaptive Gaussian kernel to generate density map for Stereographic images The proposed methods are effective in improving