

Exemplary Presentation

Author

29 Nov 2018

 LEARNING
RECOGNITION
& SURVEILLANCE

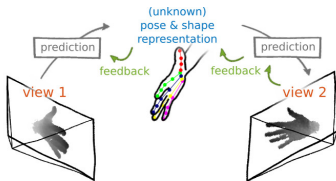




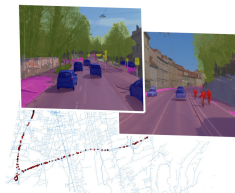
[www.icg.tugraz.at]

LEARNING
RECOGNITION
& SURVEILLANCE

[www.icg.tugraz.at/lrs]



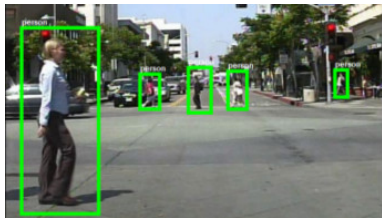
Two viewpoints [Poier'18]



Segmentation results

An Efficient Multi-Object Detection & Tracking Framework

- Accuracy/runtime trade-off:
 - Single Shot MultiBox detector [3]
 - Compressed AlexNet backbone [2,5]
 - Pretrained on Caltech [1]
 - Optimized implementation with **AVX2 instructions**
- Tracking-by-detection
 - Unscented Kalman filters
 - Robust matching via geometric cues & closed-world assumptions [4]



Caltech Pedestrian Dataset [1]

[1] Dollár, et al. *Pedestrian Detection: An Evaluation of the State of the Art*. TPAMI 34(4), 2012

[2] Krizhevsky et al. *ImageNet Classification with Deep Conv. Neural Networks*. NIPS'12

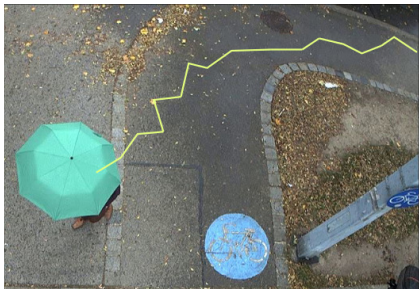
[3] Liu, et al. *SSD: Single Shot MultiBox Detector*. ECCV'16

[4] Possegger, et al. *Occlusion Geodesics for Online Multi-Object Tracking*. CVPR'14

[5] Romero, et al. *FitNets: Hints for Thin Deep Nets*. ICLR'15

4 Data Preprocessing

- Robustly detect approaching pedestrians
- Temporally link detections into trajectories
- Remove outliers, reduce jitter



How to prepare a bad slide?

Don't do this!

- Mix different fonts and sizes
- Don't check for typographical mistakes
- Use punctuation inconsistently.
- Forget the slide number so no one can refer to this slide
- Put all the text you're going to say on the slide – surely, your audience loves to read along with you
- Save the references for the last slide, so nobody knows which papers you're currently talking about
- Mix different citation styles (e.g. [1] and [VWA'19])
- Don't typeset equations, but include low-quality screenshots

instead:

$$\int_0^{\infty} e^{-\alpha x^2} dx = \frac{1}{2} \sqrt{\int_{-\infty}^{\infty} e^{-\alpha x^2} dx \int_{-\infty}^{\infty} e^{-\alpha y^2} dy}$$
$$= \frac{1}{2} \sqrt{\frac{\pi}{\alpha}}.$$

A list of all my references

Don't do this!

- Don't forget to **be inconsistent** (different names for the same conference/journal, use different reference styles, etc.)
- Use tiny/small font sizes so you can fit all references in this list

- [1] Cavanagh & Alvarez. *Tracking Multiple Targets with Multifocal Attention*. TICS 9(7), 2005
- [2] Dollár, *et al.* *Pedestrian Detection: An Evaluation of the State of the Art*. TPAMI 34(4), 2012
- [3] Liu, *et al.* *SSD: Single Shot MultiBox Detector*. ECCV'16
- [4] Krizhevsky *et al.* *ImageNet Classification with Deep Conv. Neural Networks*. NIPS'12
- [Poier'18] Poier, *et al.* *Learning Pose Specific Representations by Predicting Different Views*. CVPR'18.
- [5] Possegger, *et al.* *Occlusion Geodesics for Online Multi-Object Tracking*. IEEE Conference on Computer Vision and Pattern Recognition (**instead of the acronym CVPR as for the other references**), 2014 (**instead of the abbreviated '14 as for other conference papers**).
- [6] Romero, *et al.* *FitNets: Hints for Thin Deep Nets*. ICLR'15
- [7] Rudelsdorfer *et al.* *A novel Method for the Analysis of Sequential Actions in Team Handball*. IJCSS 13(1), 2014
- [8] Sternig *et al.* *Multi-camera Multi-object Tracking by Robust Hough-based Homography Projections*. ICCVW VS'11