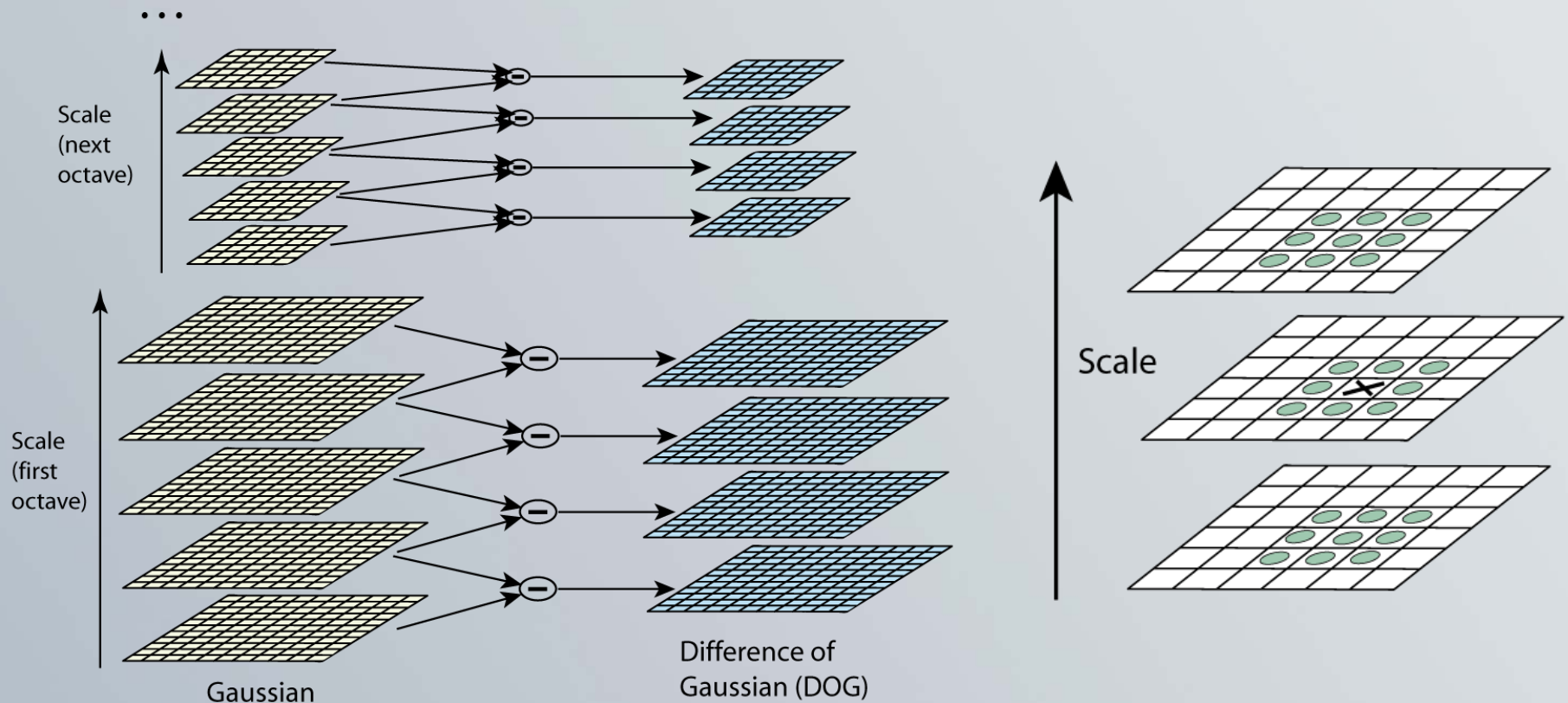


SIFT

- **Scale-Invariant-Feature-Transform**
- **Stages**
 - Scale-Space Extrema Detection
 - Keypoint Localization
 - Orientation Assignment
 - Keypoint Descriptor

Scale-Spaces & Extrema

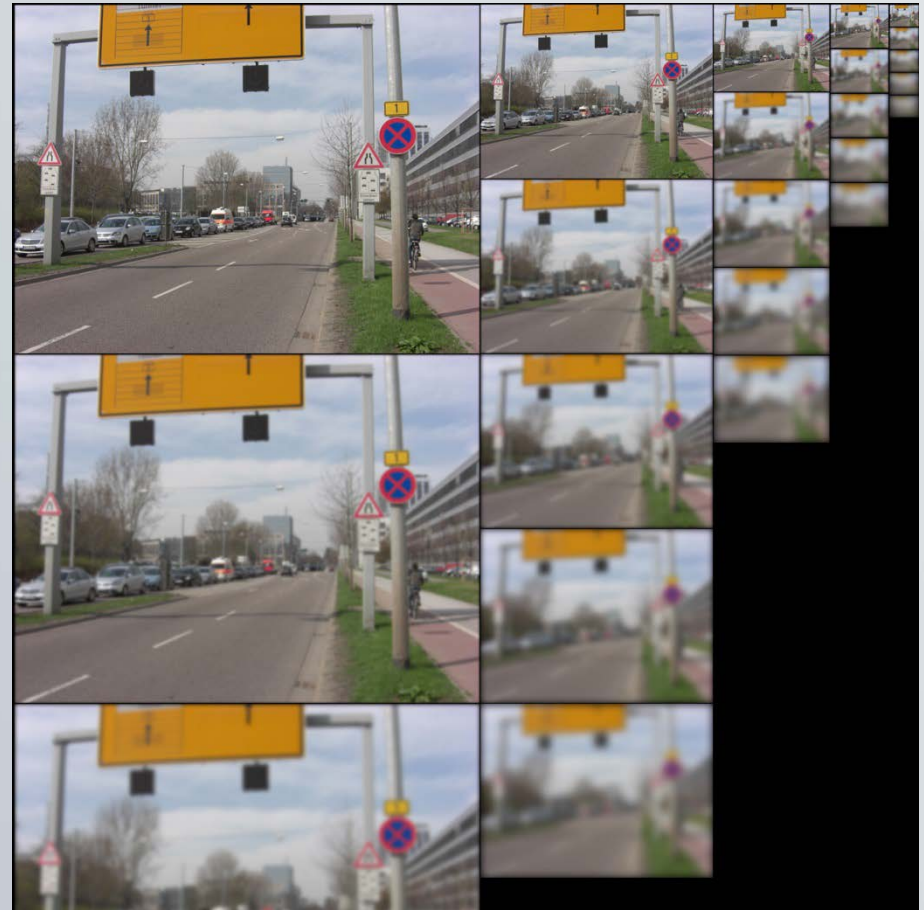


[Lo04]

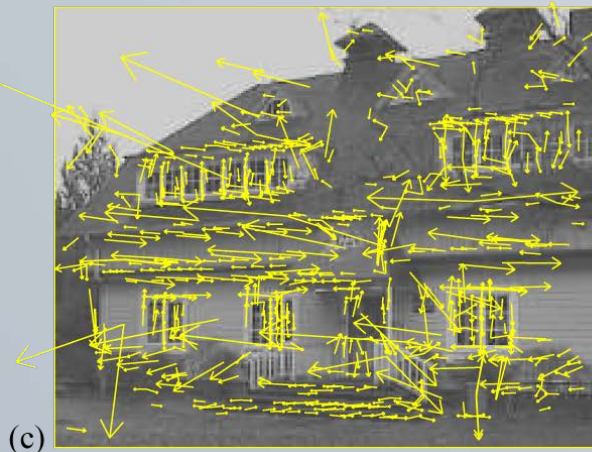
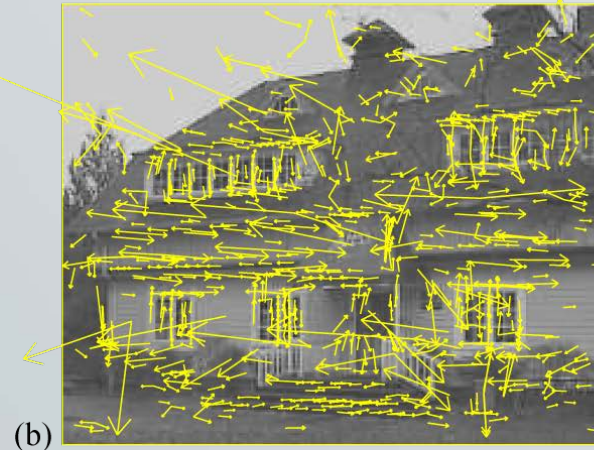
Scale-Spaces



[L2]



Keypoint Localization



[Lo04]

Orientation & Descriptor

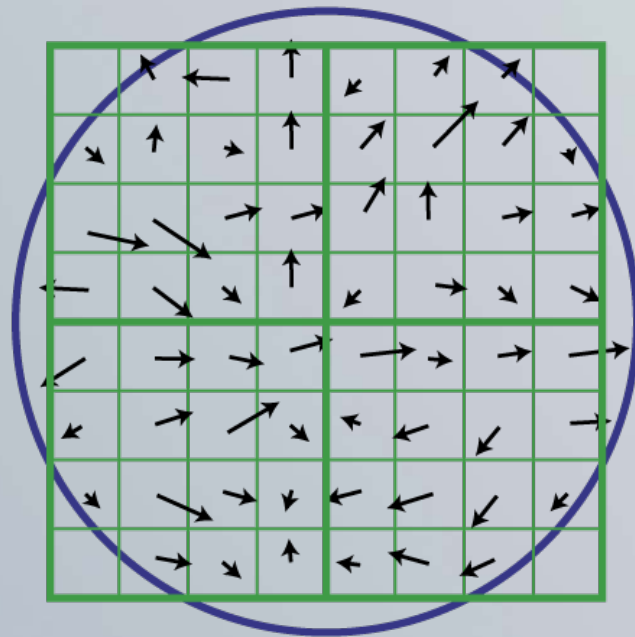
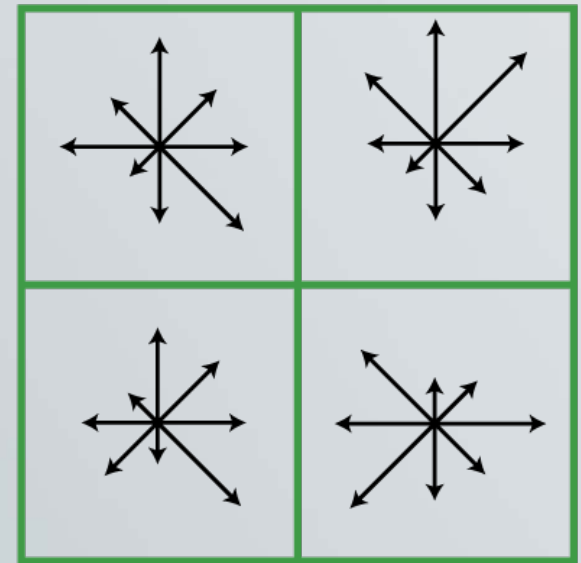


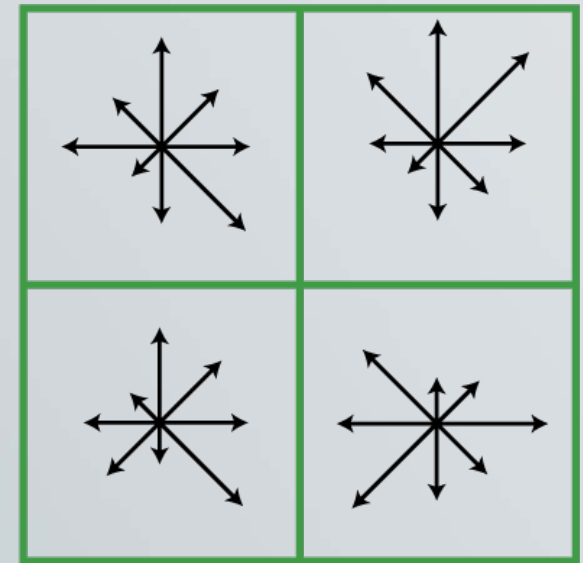
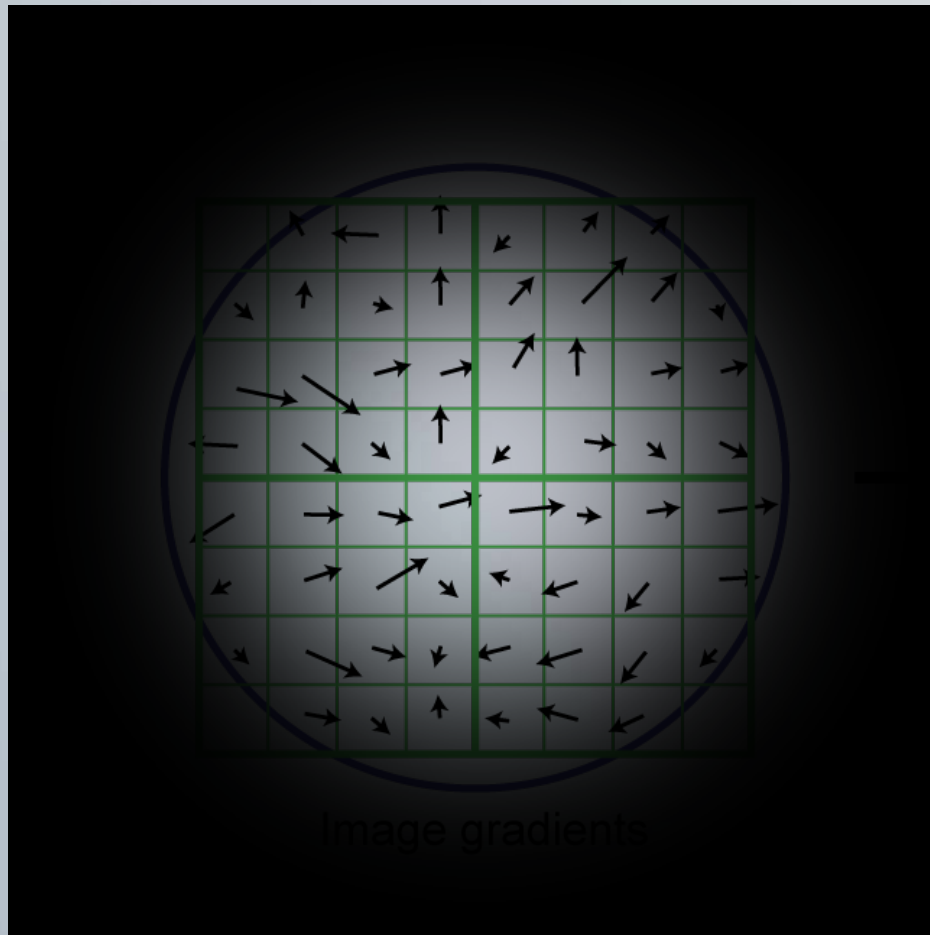
Image gradients



Keypoint descriptor

[Lo04]

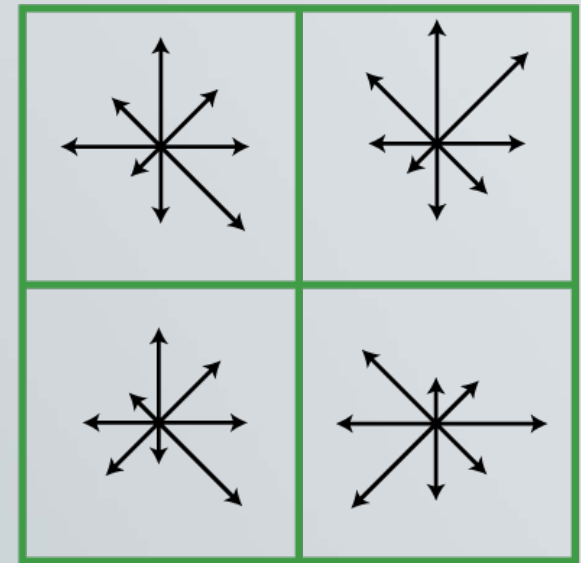
Orientation & Descriptor



[Lo04]

Orientation & Descriptor

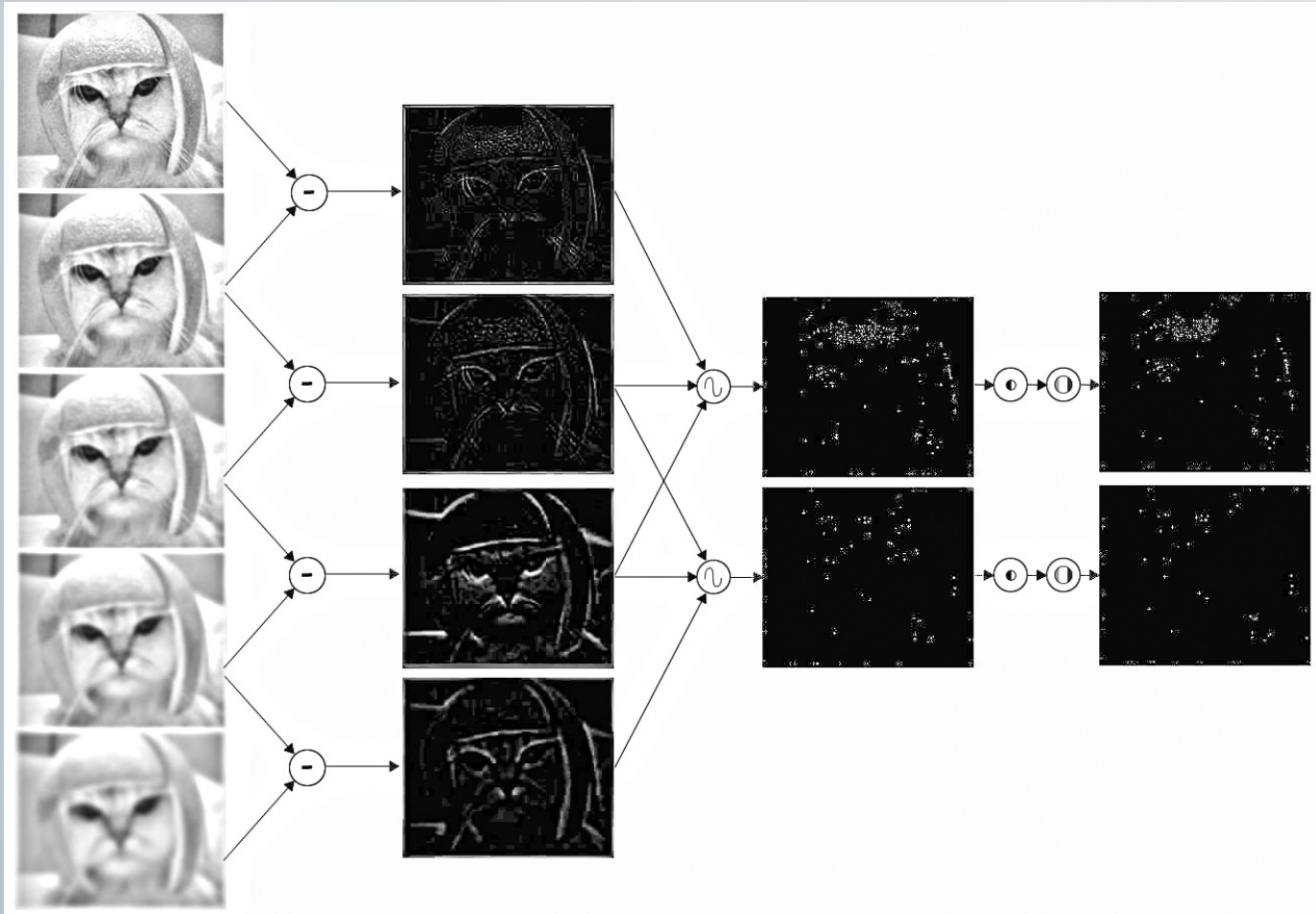
- „Orientation Histograms“
- Länge der Vektoren entspricht...
 - ...der Summe der Gradientengrößen...
 - ...in die jeweilige Richtung...
 - ...in der jeweiligen Region.



Keypoint descriptor

[Lo04]

Pipeline Überblick



[L1]

Was nun?

- **Nutzung eines der OpenCV**
***Matcher...**
 - ...solange Code die Kompatibilität zu OpenCV
Feature2D Standardinterfaces gewährleistet
- **„Nearest Neighbour“ mit minimaler
euklidischer Distanz empfohlen**

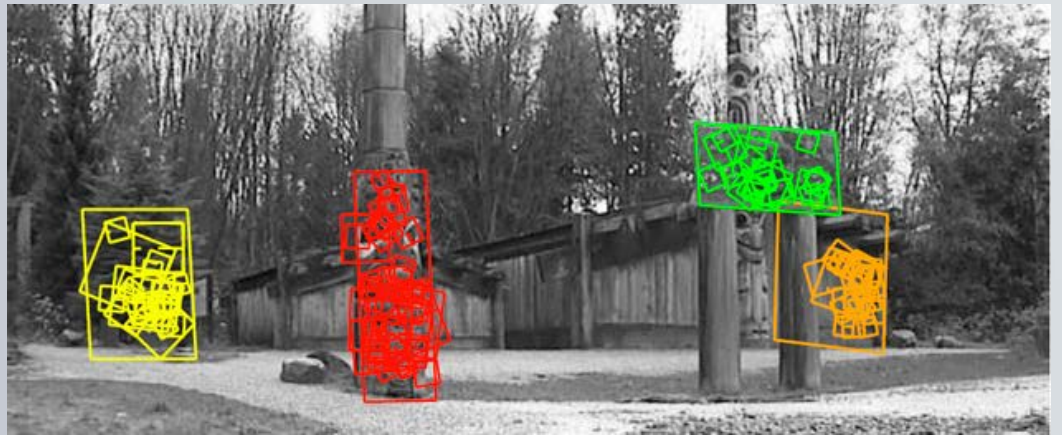
SIFT in Aktion



[Lo04]



SIFT in Aktion



[Lo04]

Quellen

- [L1] aishack.com
- [L2] www.wisg.cs.uni-magdeburg.de/bv/index.php?article_id=23&clang=0
 - Arbeitsgruppe
Bildverarbeitung,
Bildverstehen
- [Lo04]
 - David G. Lowe
 - Distinctive Image Features
from Scale-Invariant
Keypoints (2004)