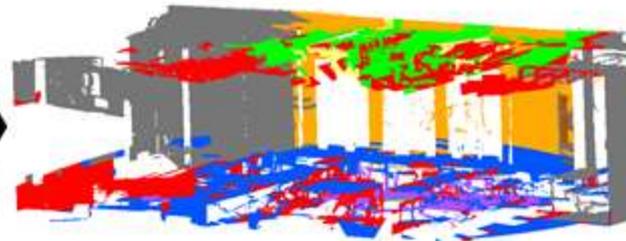


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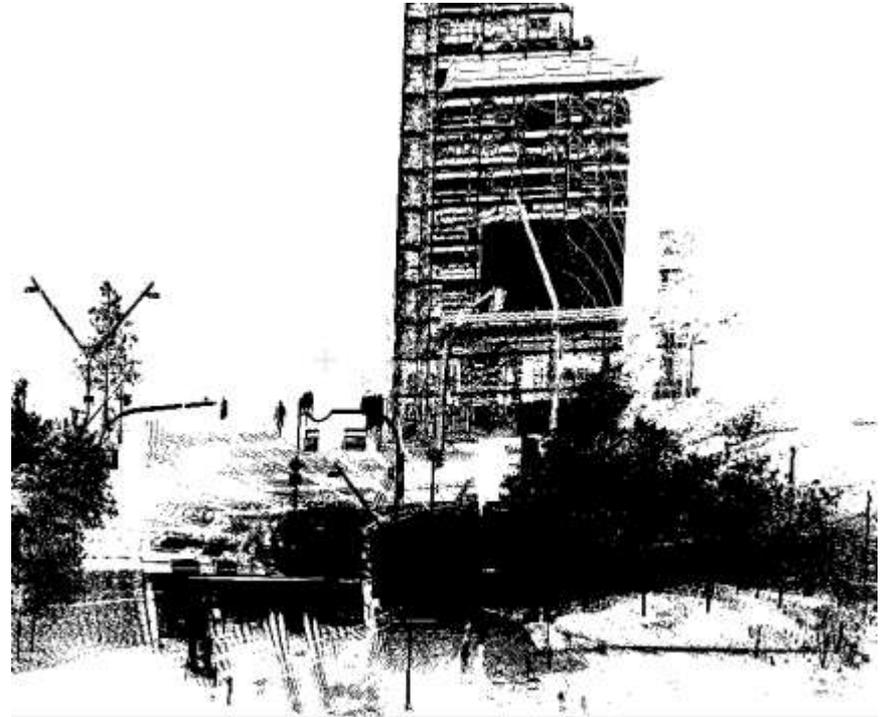
Generation Of Training Data For 3D- Point Cloud Classification By CNN

Eike Barnefske & Harald Sternberg

Point clouds cause problems!

Point clouds

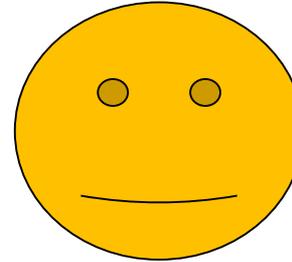
- are large
 - are unstructured
 - contain different objects
 - have errors
 - have overlapping objects
 - have gaps
 - differ in density
-
- and the grouping of the points to sense classes is time- and labor-intensive.



Are there any solutions?

Yes!

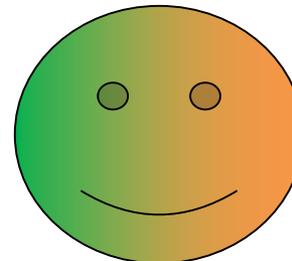
- Improved tools for manual segmentation.
- Automatic tools for special questions.



Still very labor-intensive.

Let's a computer do the segmentation and classification on its own!

Using **Deep learning**:



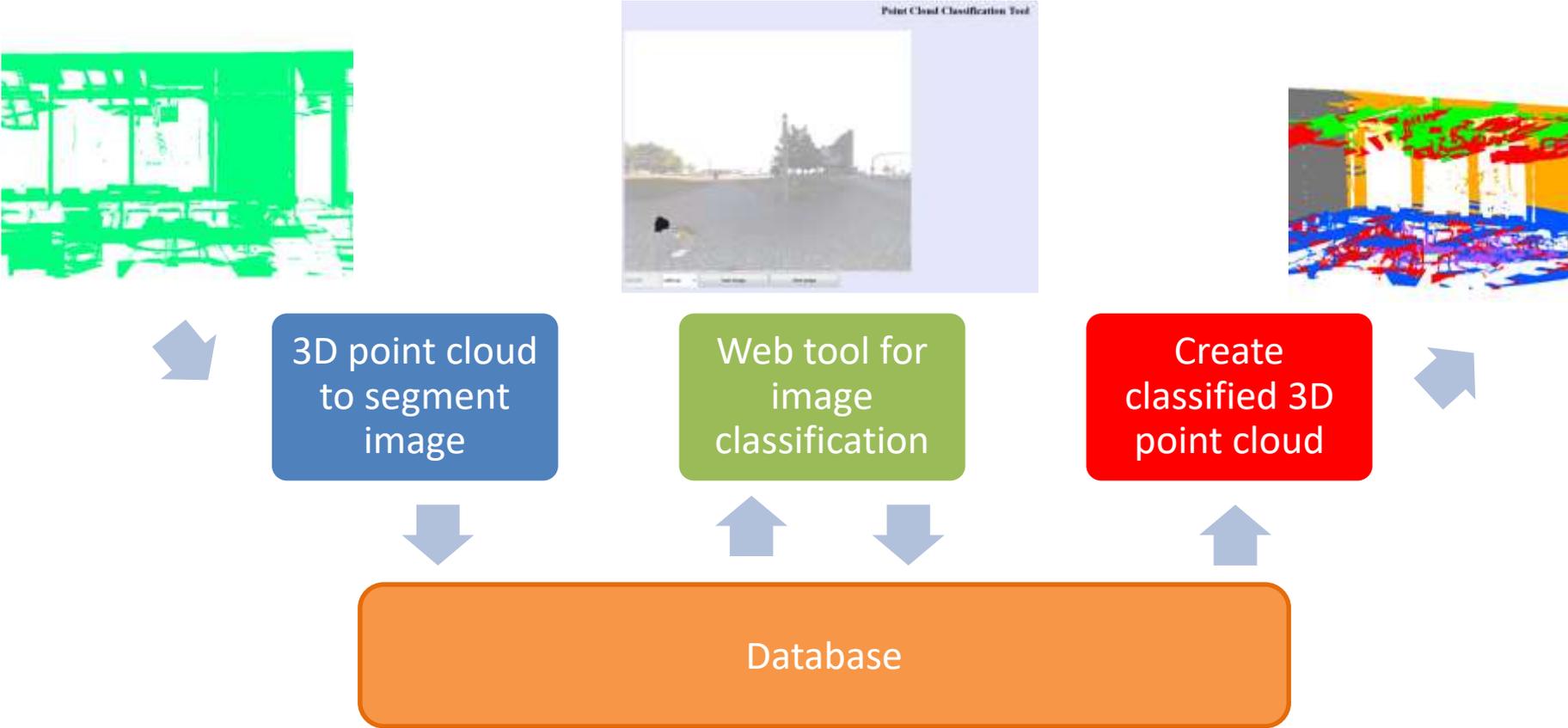
Hard to find a fitting
CNN architecture

VoxNet, PointNet, Semantic3D.Net, PIXOR, ...

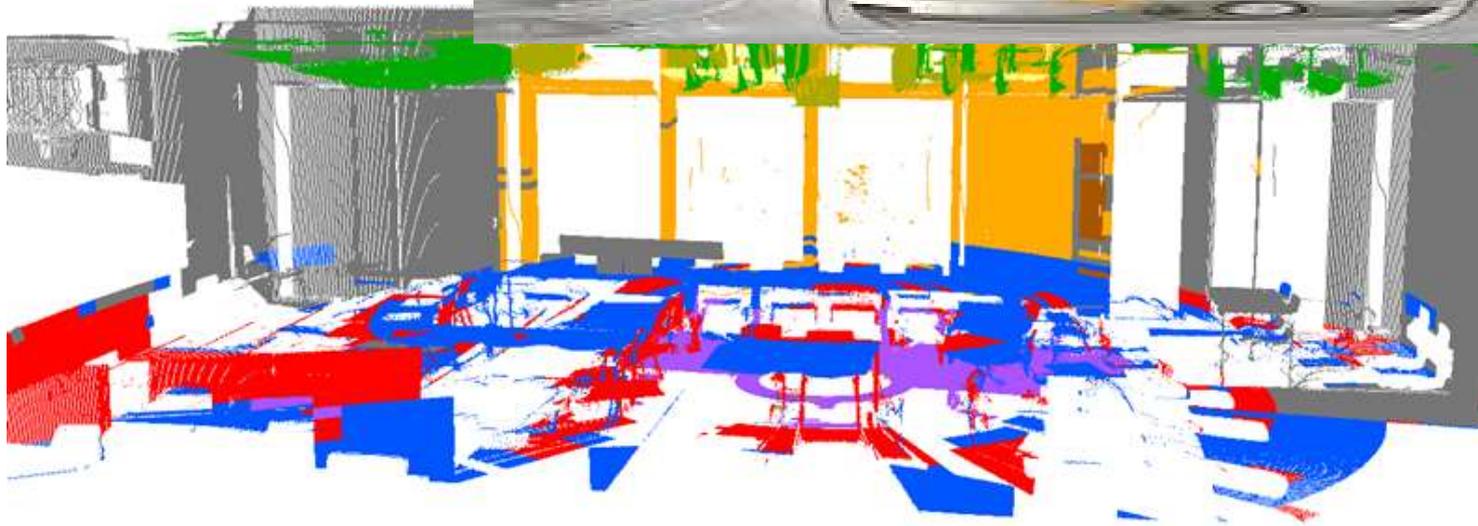
Large mount of
training data



Address the problem training data to PCCT



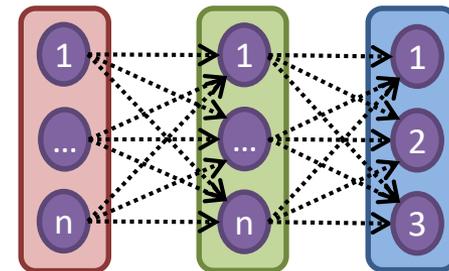
- Up to 95% of the
- Homogeneous and filigree objects.
- Close objects are
- Color value is still



- Ceiling
- Window
- Floor
- Table
- Chair
- Lamella
- Lamp

Conclusion and Outlook

- Reliable point clouds are a significant element for CNN-based classification techniques.
- PCCT is efficient and easy to use.
- Extensions in segmentation and projection are necessary (and implied).
- With PCCT generated point clouds are tested with simple CNNs.





Thank you for you attention!

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<https://github.com/eb17/PCCT>