Machine Learning, AI & satellite imagery: what impact on humanitarian mapping?

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As an ML engineer, how to help?
Automatize mapping!
Machine Learning

Learning to reproduce a result, a behavior
Manual mapping from images

From mapping to ML
Machine learning to make footprints

Machine Learning task:

- Isolate patches around buildings
- Generate buildings footprint

From mapping to ML

Detection

Segmentation
Current approach:
Deep learning learning to make footprints

Use Deep Learning
=
Deep Neural Network
Deep learning learning to make footprints

Use of Convolutional Neural Network (CNN)

- Produce segmentation of input image
- Translate the segmentation into coordinates / Vector data
Machine learning to make footprints

Example of a neural network trained by Magellium for building segmentation in satellite images.

a) input image,
b) ground truth, in which buildings are merged when they are separated by less than 10m

c) Model output with **New** data.
Machine learning to make footprints

We can learn multiple features from the **same** Deep Learning model
Conclusion
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Thank you

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