Transfer Learning for Anomaly Detection through Localized and Unsupervised Instance Selection

Vincent Vercruyssen, Wannes Meert, Jesse Davis

Labels improve anomaly detection

- Labels are *costly*
- Labels are *difficult to obtain*

We often have a lot of similar datasets

- A retail chain has 100s of stores.
- A wind farm has 10s of turbines.
- A factory has 100s of machines.

Even *active learning is too costly*!

Can we **reuse** the available label information between related datasets to improve anomaly detection?

Code & Paper: https://github.com/Vincent-Vercruyssen/LocIT

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Transfer Learning for Anomaly Detection through Localized and Unsupervised Instance Selection

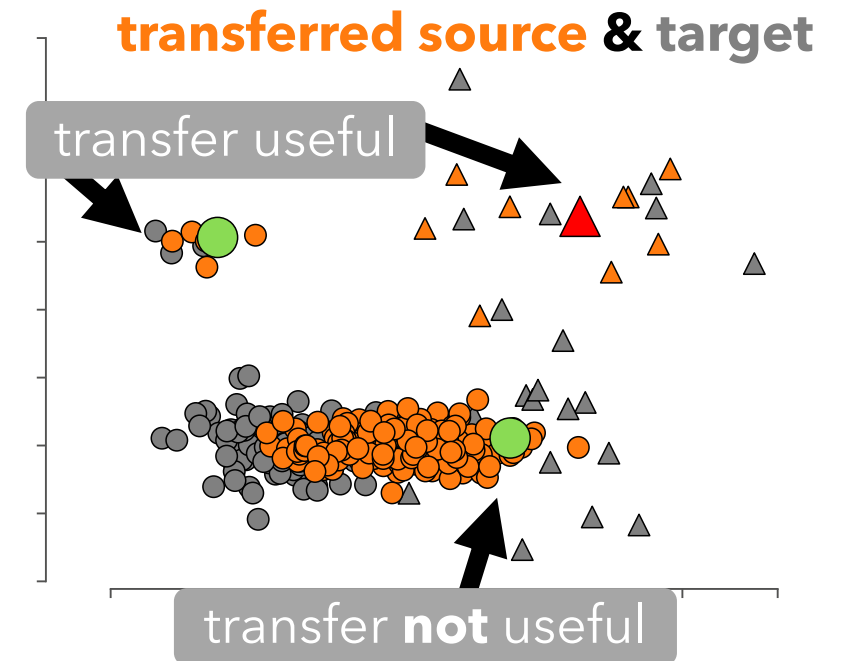**Vincent Vercruyssen**, Wannes Meert, Jesse Davis

Transfer learning can alleviate the need for labels in anomaly detection!

1. What information do we transfer between datasets?

   LocIT algorithm

2. How to use the transferred information?

   SSκNNo algorithm

transferred source & target

transfer useful

transfer **not** useful

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