

Progress Nov 16

ML4Science - Defects Detection

Manual labelling (Dirt, Dirt-Wire, Burn and Open)



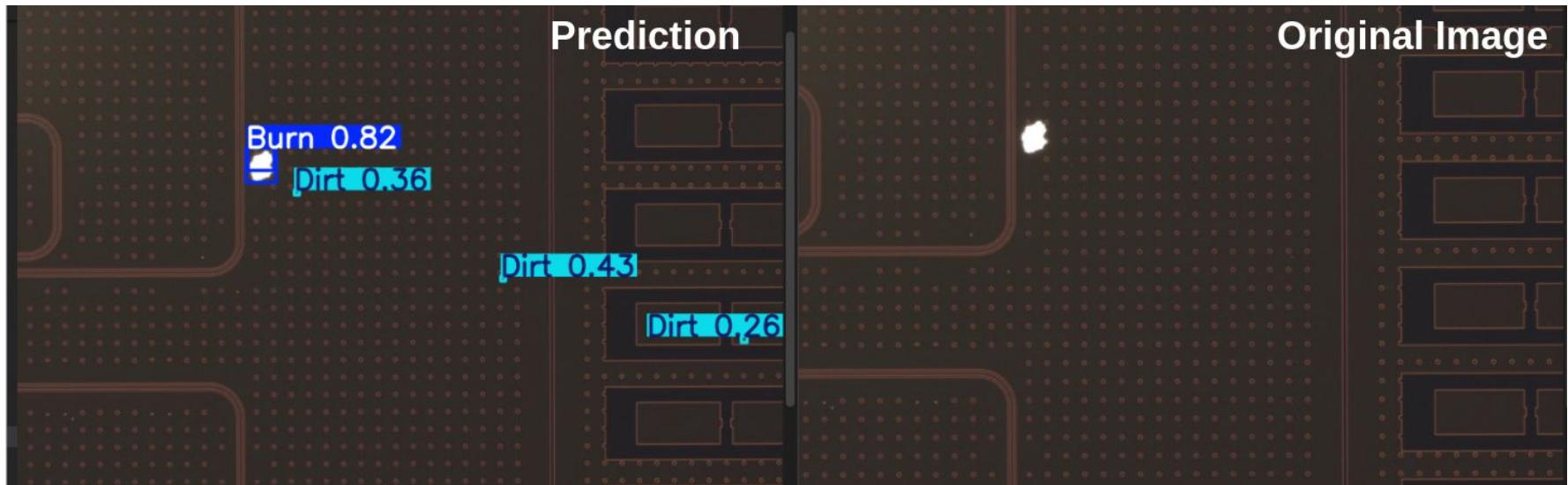
Manual labelling (Dirt, Dirt-Wire, Burn and Open)



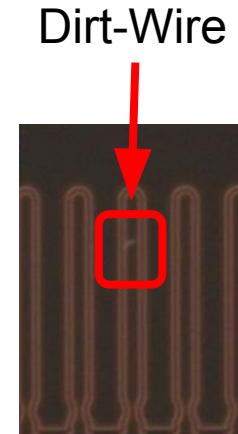
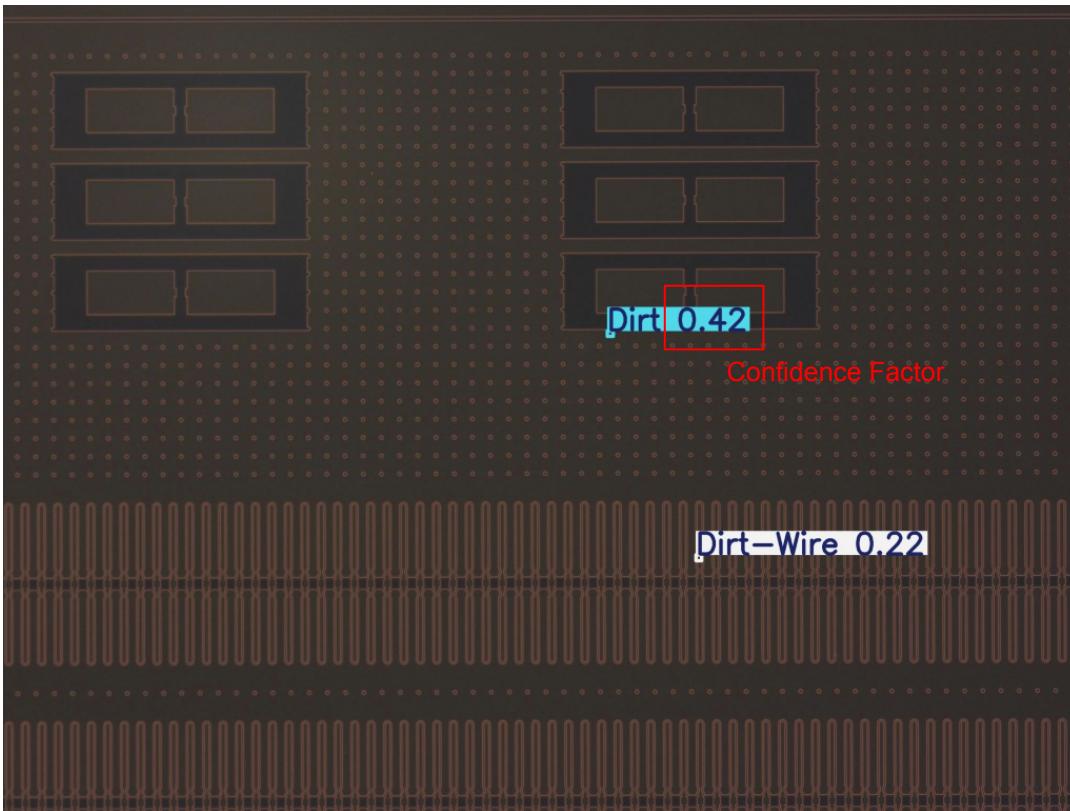
Model Predictions - Example 1

- with labels!
- poor generalization
- (see last slide)

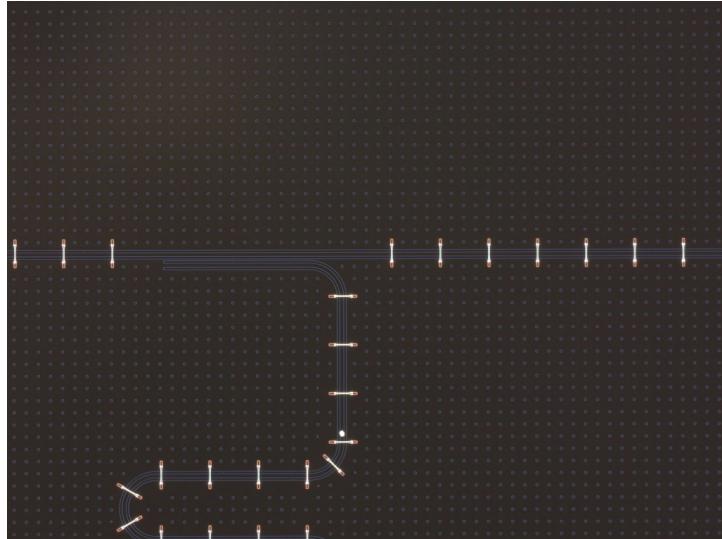
But, it works...



Model Predictions - Example 2



Problem: Multiple colours + Different Layouts (poor generalization)



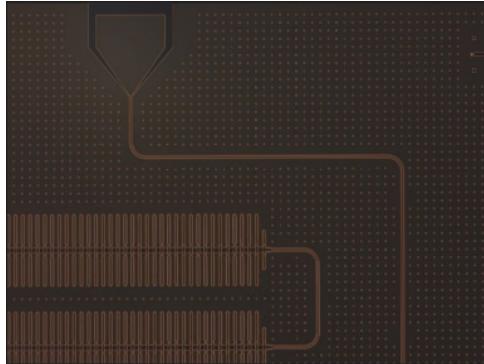
Training only in one layout it
doesn't generalize well...

Image Removed due to NDA

First Approach: Training with **Data Augmentation**

Training input:

All our labels are in one layout, so
we augment the data



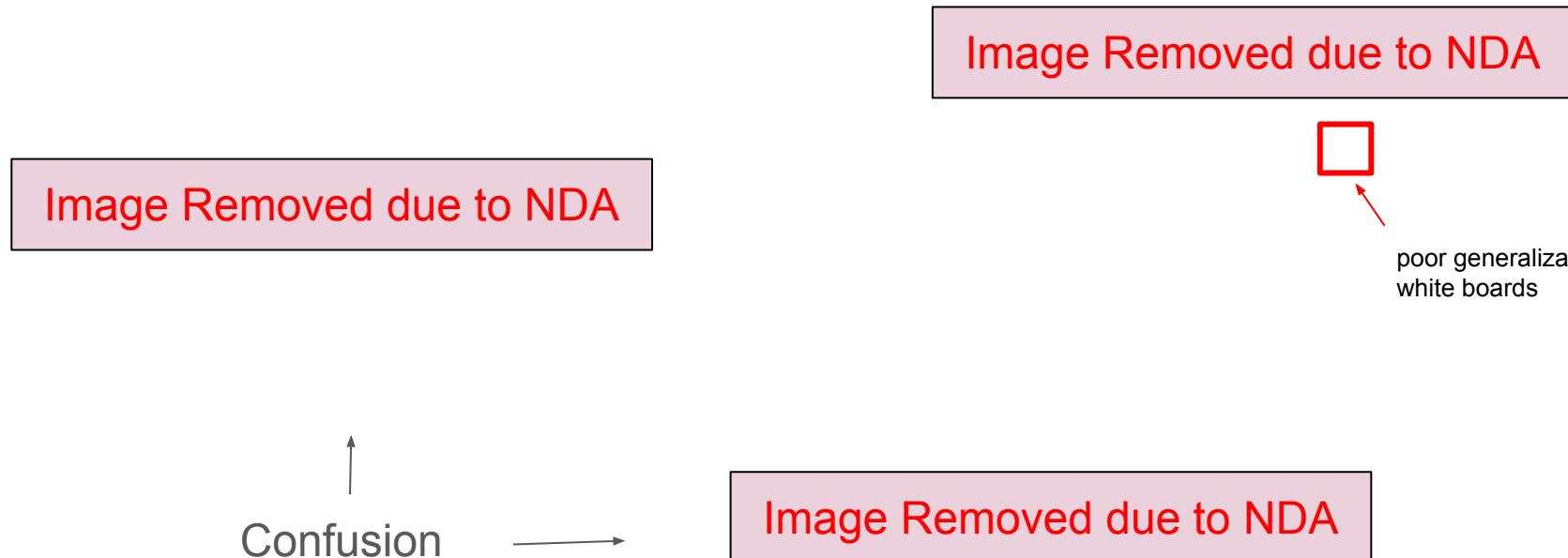
e.g: Clipping, Colours, ...



Generate diverse samples

Image Removed due to NDA

Reality: many problems yet to be solved



Classes Definition

ML4Science - Defects Detection

Open-Circuit – Misclassification

Since we didn't train on a sufficient number of Open, he considered this a Dirt



Image Removed due to NDA

Defect-Types

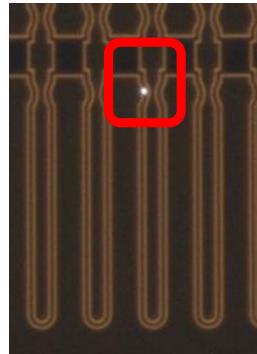
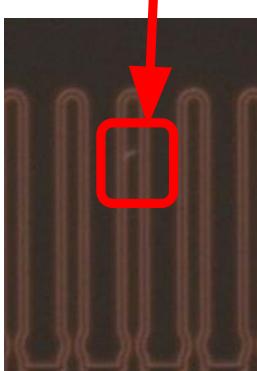
Dirt



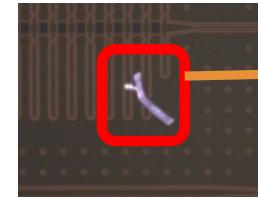
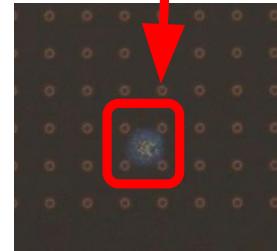
Image Removed due to NDA



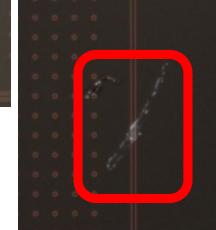
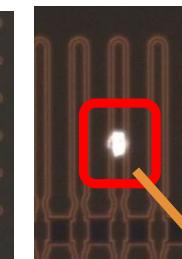
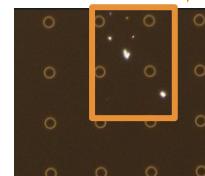
Dirt-Wire



Burn



Should these be classified as Burn?



Open



Image Removed due to NDA

Should also be
classified as Open?

Dirt

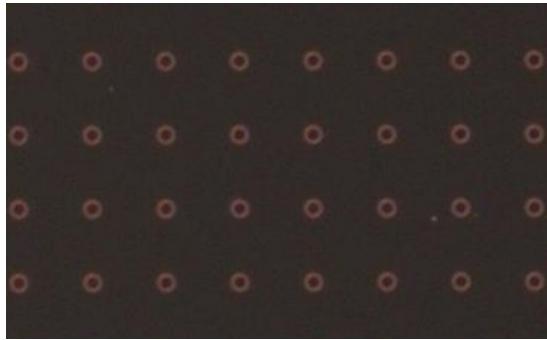


Image Removed due to NDA

Image Removed due to NDA

Dirt-Wire

Image Removed due to NDA

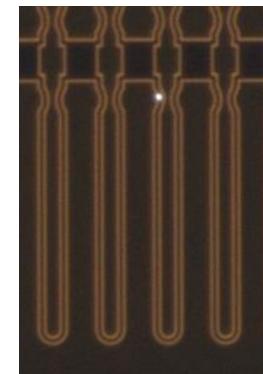
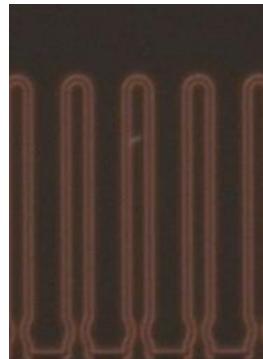


Image Removed due to NDA

Burn

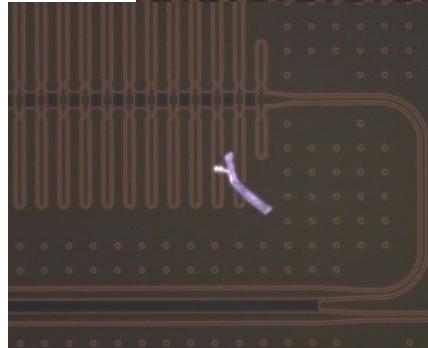
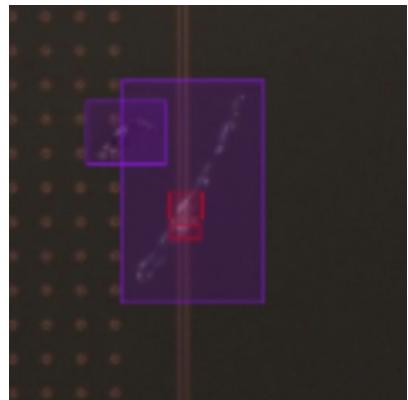
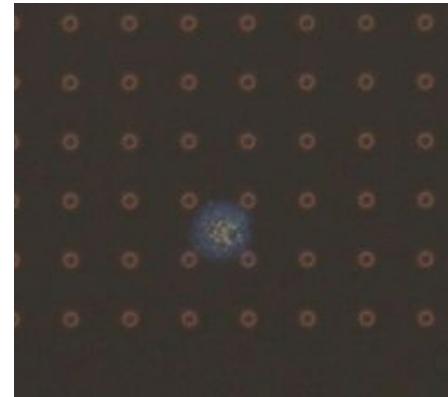
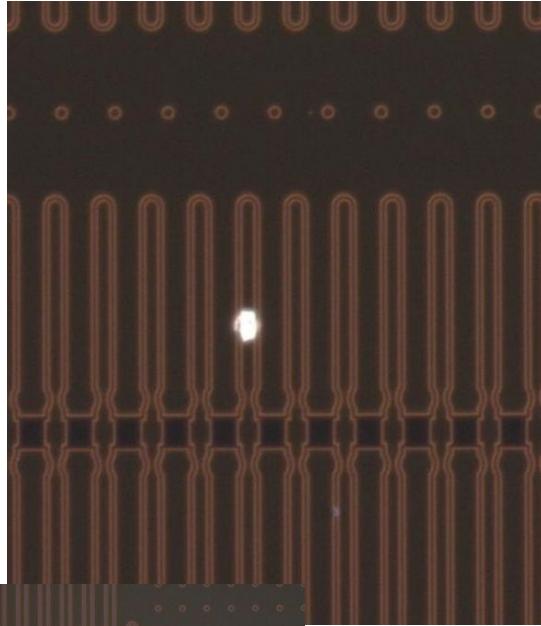
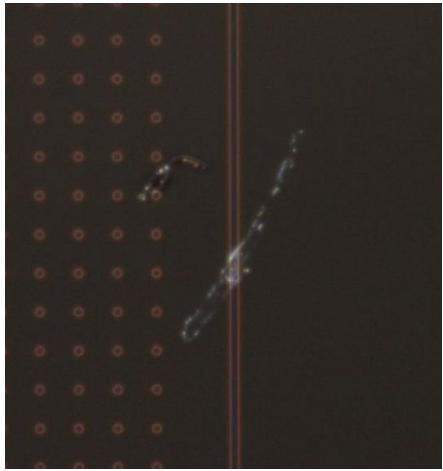


Image Removed due to NDA

Open

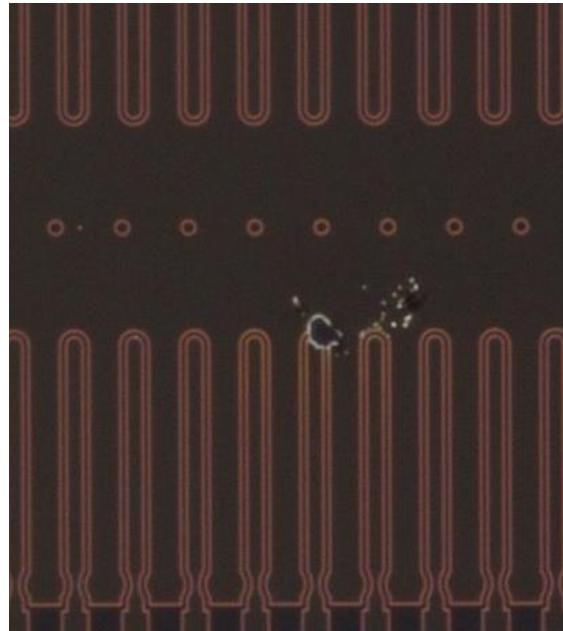


Image Removed due to NDA