



**Model-free anomaly  
detection on 3D scans**  
**Visio Impulse Limited**



smart

advanced manufacturing

## Visio Impulse

- Visio Impulse is a Start-up (micro business) with strong background in Machine Vision and Visual Analytics.
- Our small, yet growing, team is formed of PhD level computer vision researchers, software developers and seasoned managers.
- We provide analytical solutions to a wide range of sectors including; Construction, Retail, Rail, Mapping, Energy.
- We have worked with National Physical Laboratory (under InnovateUK A4I grant) on “Error-Bounded Generative Model for 3D Scan Completion”. We also worked with the University of Huddersfield on “Digital-Twin for the Rail Rule Book”

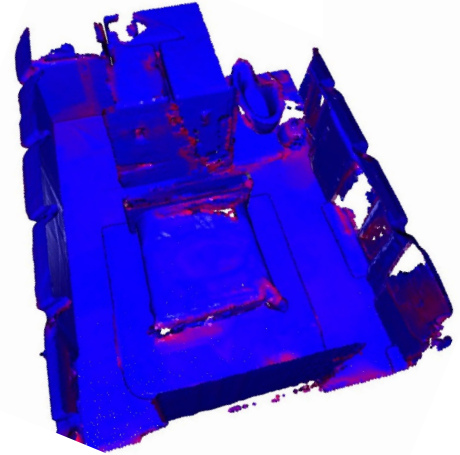
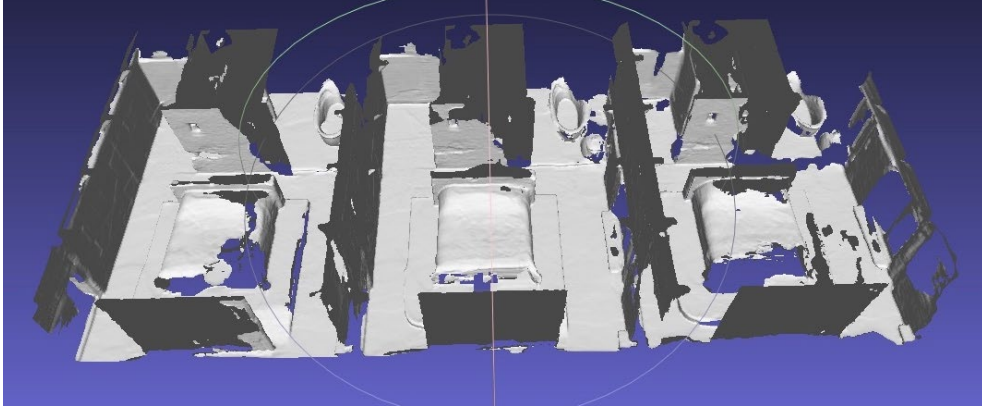
## PROPOSAL INTRODUCTION (I)

**Vision:** A data-driven, self-supervised, machine learning approach to visual quality control and anomaly detection. In particular, we propose a system that monitors the 3D structure of a product and locates/identifies abnormalities (out of distribution structure)

**Motivation:** The proposed technology has been successfully tested on augmenting/completing indoor laser scans. We hope the technology can be re-purposed and applied to QC in advanced manufacturing.

**Content:** The self-supervised nature of the proposed solution makes it extremely transferable, and eliminates the cumbersome data labelling step, bring down the barrier to entry and making the solution deployable in real-time in new and unforeseen circumstances.

## PROPOSAL INTRODUCTION (II)



## PROPOSAL INTRODUCTION (III)

**Expected outcome:** An automated visual quality control system, based on state-of-the-art machine learning techniques but without the need for costly and tedious data labelling and human supervision.

**Impacts:** We hope to help manufacturers more accurately and cost-effectively perform production quality inspections.

**Schedule:** We are flexible to adjust the scope and the length of the work according to the requirements of the consortium.

## PARTNERS

We are hoping to join a consortium of manufacturers whom we can help on automatic anomaly detection without prior models.



## CONTACT INFO

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