



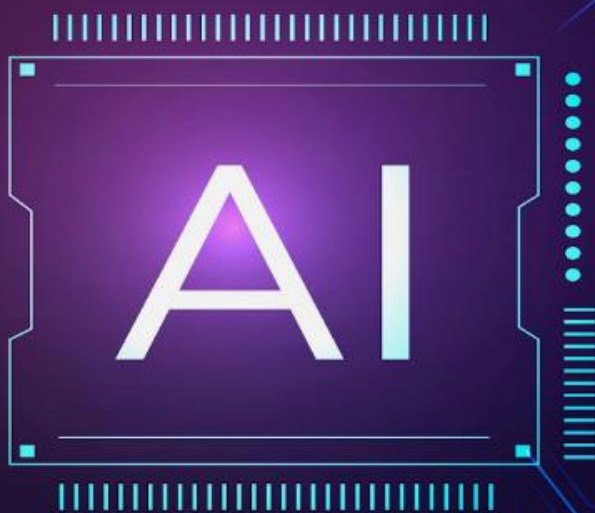
SHYENA
TECH YARNS

A Data Science Company



Case Study

Object Recognition in 3D Point Cloud



About the Client

A Building Information Management Product Company

Business Problem

Building information management (BIM) system implementation company wanted to integrate object recognition with BIM to automate the manual way to measure the construction site progress, especially installations of Pumps, Bends and Valves. This would enable BIM not only to track site construction progress, it will also detect any anomalies in the site construction

Solution

The solution was developed using Pointnet++, which is a pre-built deep learning network for classification & segmentation. Pointnet++ is pre-trained on Shapenet & Modelnet, hence provide transfer learning capability for new data. The customer had provided point cloud datasets for small, medium & large objects captured using LIDAR primarily for pump, bend & valve. This data was then processed using python point cloud library (pcl) and uniformly sampled to make it ready for Pointnet++. The model recognized these objects with more than 90% accuracy. We also build the APIs on top of the model for ease in integration with the BIM system

Outcome

With our advanced AI Models, the Client was able to automate the error prone human dependent construction site progress measurement.

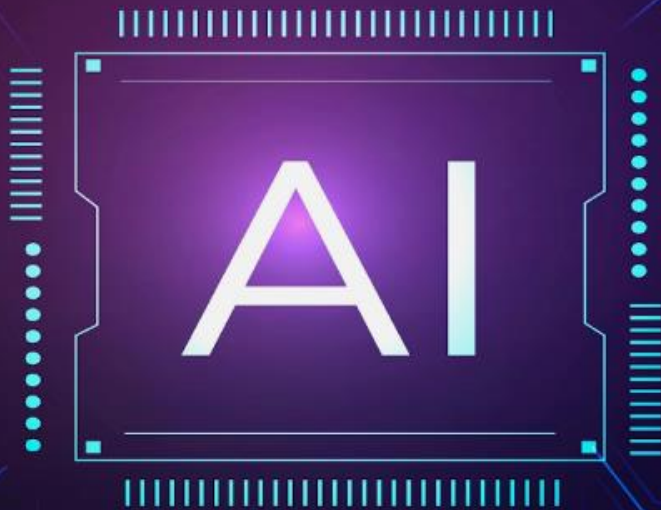
Technology Used

Python, OpenCV, Tensorflow, Deep Learning using PointNet++



SHYENA
TECHYARNS

A Data Science Company



Office Locations

Pune, India

3rd floor, Sargam Tower
Anna Saheb Chirmule
Path, Neel Kamal
Society, Karve Nagar,
Pune 411052

Middletown, USA

651 N. Broad St.
Suite 206,
Middletown,
DE
19709

London, UK

Suite 858,
Unit 3A,
34-35 Hatton Garden,
Holborn, London,
EC1N 8DX

Email us for your technology needs
contact@shyenatechyarns.com

Schedule an appointment on
www.shyenatechyarns.com