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How Advanced Annotation Helped to Reduce Manual Take-off Effort by 80% and Enhance Accuracy by 25%

CLIENT OVERVIEW

The client is a leading US-based business intelligence company specializing in data-driven solutions for the construction industry.

PROBLEM

The client wanted to develop a robust object detection and instance segmentation model to automate the identification and quantification of various building components from construction floor plans, streamlining the take-off process and minimizing manual effort.

SOLUTION

Lumina Datamatics utilized its expertise in advanced annotation techniques to deliver a comprehensive solution for this project.

- Gathered diverse construction floor plans across various architectural styles, scales, and complexities.
- Utilized skilled annotators with deep domain knowledge in construction for meticulous object detection and instance segmentation.
- Implemented rigorous quality control measures including automated checks, peer reviews, and expert validations.
- Leveraged Label Studio for enterprise-grade annotation with customizable workflows, collaborative annotation features, and scalable performance.
- Employed advanced techniques including geometric transformations, domain randomization, and synthetic data generation for enhanced dataset diversity.

RESULT

- Delivered a comprehensive, high-quality annotated dataset comprising over 80,000-floor plan images with precise object detection and instance segmentation annotations.
- Enabled the client to train a state-of-the-art deep learning model, reducing manual take-off effort by 80% and improving accuracy by 25%.
- Empowered the client with precise measurements and quantities, enabling accurate cost estimates, optimized material procurement, and enhanced project planning capabilities.

ABOUT US:

Globally, 8 of the top 10 publishers and 3 of the top 5 ecommerce retailers trust Lumina Datamatics as their strategic partner in providing content, analytics, and technology solutions. Our clients benefit from the reduced time-to-market for new products and services, optimized business processes, operational efficiencies, improved competitiveness, and relevant insights. Lumina Datamatics' expert solutions comprise in-house platforms, partnerships with global technology leaders, and more than 3500 professionals across Germany, India, UK, United States, and Philippines.