

### 3. Decreasing Size Stack

We introduce CADSP, a panoptic symbol-to-the-field drawings. Extending the diversity, scale variations, and designs. CADSP preserves representing primitive passive drawn attributes like methods to point cloud images for accurate segmentation. Further propose a novel Sketch technique, combining this with Suppression (NMS) to handle new large-scale object handling.

Figure 3 consists of two parts. Part (a), titled 'Pre-processing Stage', shows a 2D CAD drawing of a chair being sampled with a grid of points, labeled 'Dense Samp'. Part (b), titled 'PTv3 Stage', shows a 3D point cloud of the same chair being processed by a neural network. The network's output is a 3D volume where each voxel contains a semantic label for the primitive symbol it contains. A legend identifies the labels: 'rect' for rectangle, 'circle' for circle, 'text' for text, 'triangle' for triangle, 'square' for square, and 'diamond' for diamond.

We introduce CADSymbol, a multi-scale pixel-based graph mining primitive that augments the full diversity of CAD graphical objects with vector graphical shapes that incorporate geometric and topological information. Existing methods focus on processing small to medium CAD datasets with a limited diversity, scale variations, and overlapping regions, while we handle large-scale datasets with a wide range of geometries and complex designs. CADSymbol is a general framework for symbol spotting across extensive datasets, including point clouds, 3D CAD drawings, and 2D engineering drawings. By sampling points, it still overcomes the lack of feature extraction and matching. During inference, our framework uses a two-stage approach to identify symbols in CAD drawings. In the first stage, we extract features from the CAD drawing and use them to find potential symbol candidates. In the second stage, we refine the candidates by comparing them against a database of known symbols. This allows us to handle large-scale datasets with a wide range of geometries and complex designs. CADSymbol is a general framework for symbol spotting across extensive datasets, including point clouds, 3D CAD drawings, and 2D engineering drawings. By sampling points, it still overcomes the lack of feature extraction and matching. During inference, our framework uses a two-stage approach to identify symbols in CAD drawings. In the first stage, we extract features from the CAD drawing and use them to find potential symbol candidates. In the second stage, we refine the candidates by comparing them against a database of known symbols. This allows us to handle large-scale datasets with a wide range of geometries and complex designs.