

# Depixelizing Pixel Art

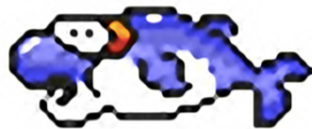
**Problem :** Convert pixel-art into resolution independent vector representations

## Related Work:

Original



Image Upsampling



Pixel Art Upscaling

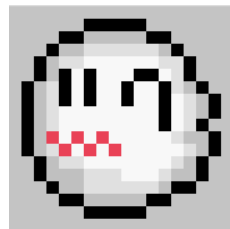


Image Vectorisation

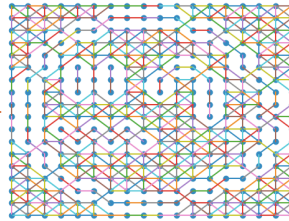


## Algorithm:

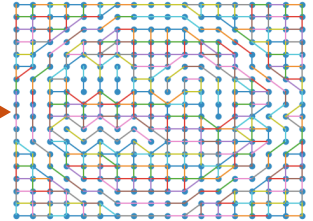
1. Input a Pixel Art .png file
2. Create similarity graph where each node is a pixel and has an edge between similar pixels.
3. Remove crossing edges to make the similarity graph planar
4. Convert the graph to a Voronoi Diagram and collapse valence 2 nodes in the reshaped cells.
5. Smoothen the sharp edges by fitting spline curves to the visible edges.



Original Image



Similarity Graph



Cross Edges Removed

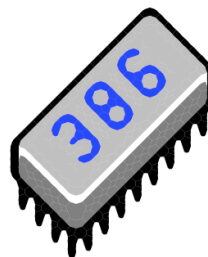
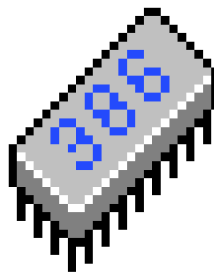


Voronoi Diagram



B-splines

## Results:



Heuristics:

Curves

Sparse Pixels

Islands

