

# Progress report #4 - 02.04.2020

## Main purpose / focus

Finish algorithm improvements and start on surface voxel coloring.

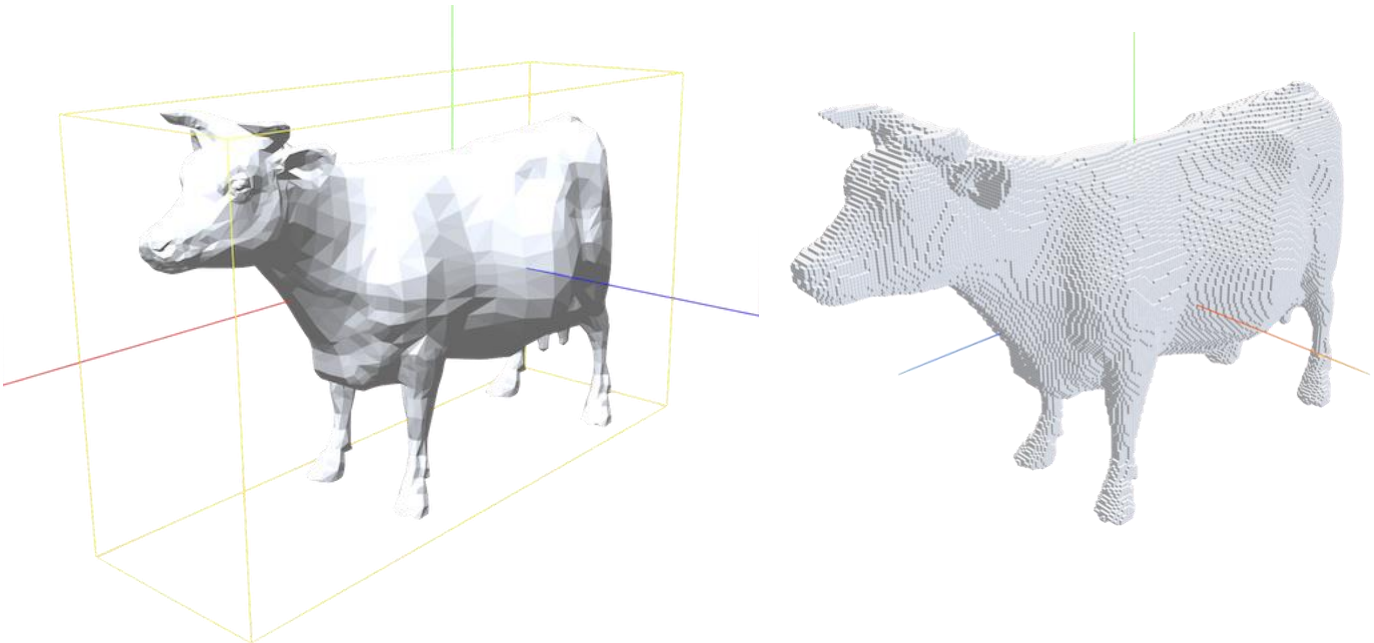
## Planned activities

1. Improve algorithm for shell voxelization
2. Improve algorithm for solid voxelization
3. Implement voxel coloring system

## Completed work

1. Both the shell and solid voxelization algorithms are completed.
  1. Runtime of  $O(n^3)$ , excluding time taken for raycasting, where  $n$  is the resolution (number of voxels produced is  $n^3$ ).
  2. Generates geometrically representative result without distortions.
  3. Output is without holes, unless dictated so by the model.
  4. Internal structures and cavities are preserved.

Voxelization example:



The cow model is provided courtesy of the [AIM@SHAPE project](#).