Virtual Fossil Fragmenter

Hack The Deep
AMNH - Hackathon
February - 2018

Team & Repository

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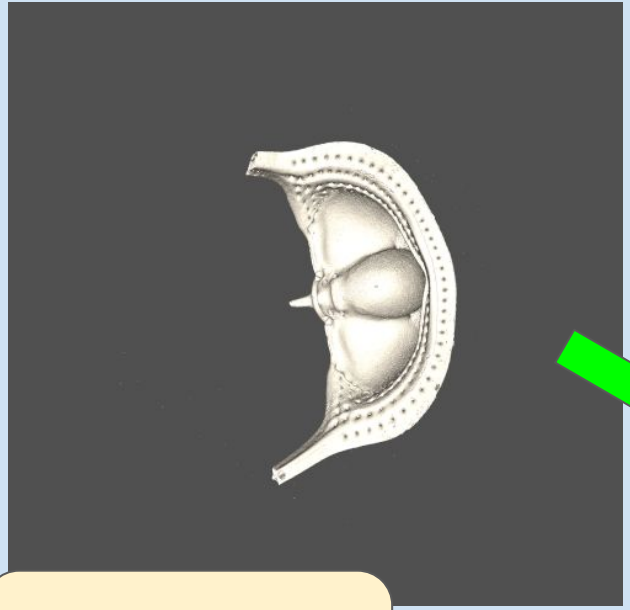
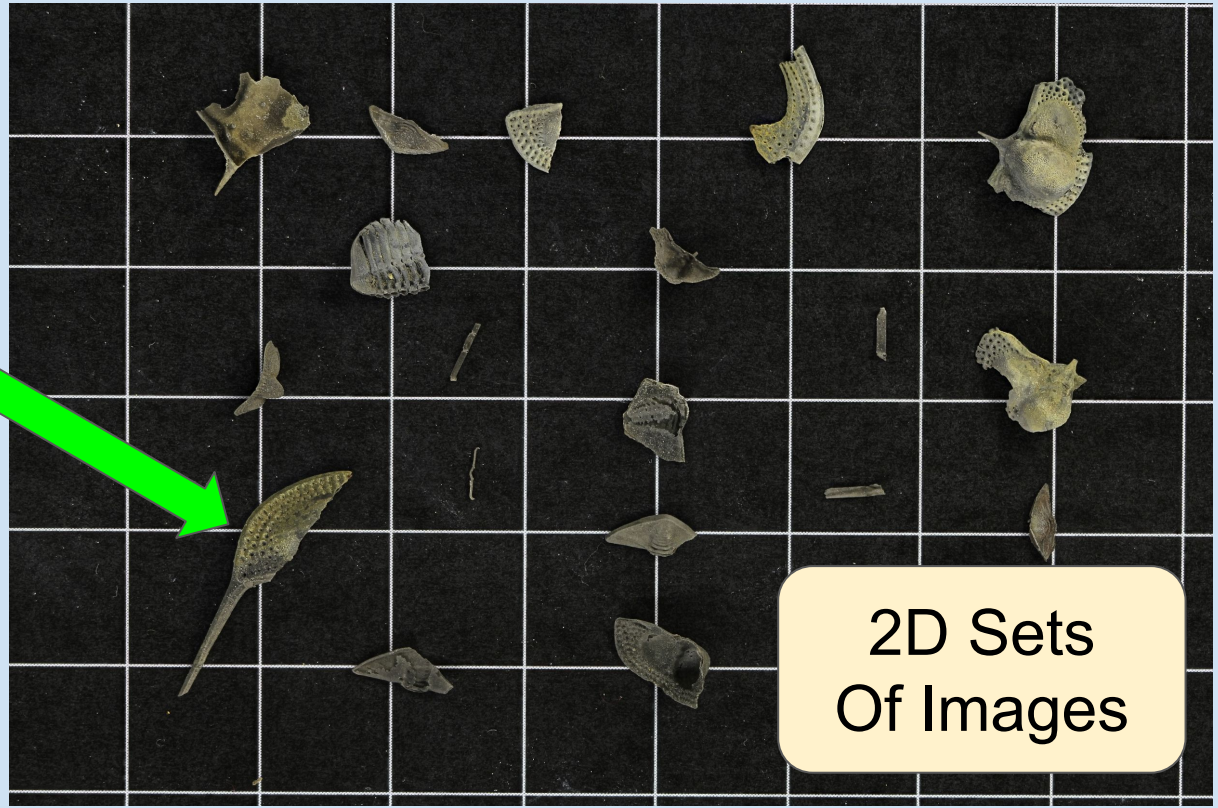
https://github.com/HackTheDeep/virtual-fossil-fragmenter

https://github.com/amnh/HackTheDeep/tree/master/challenges/Virtual_Fossil_Fragmenter

The Challenge

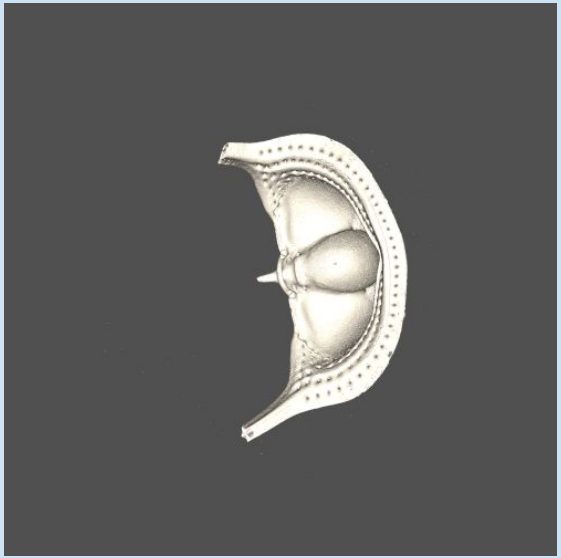


3D Surface Model



2D Sets Of Images

3D Model → Fragments



3D Surface Model

3D Surface Fragment

3D Model → Fragments

2D Images → Fossil Features

Shell

Conic Outline

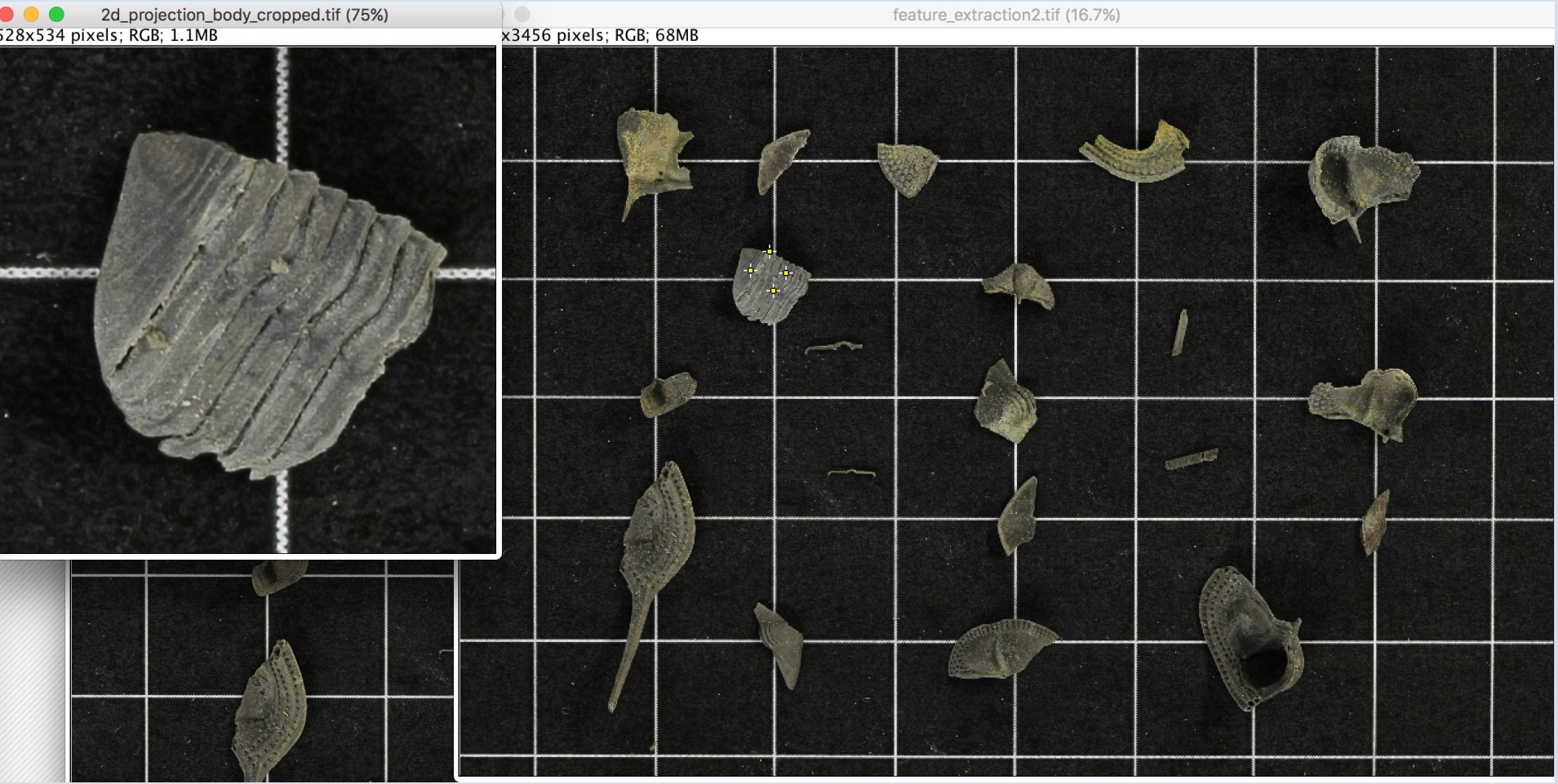
Thorax

Parallel Ridges

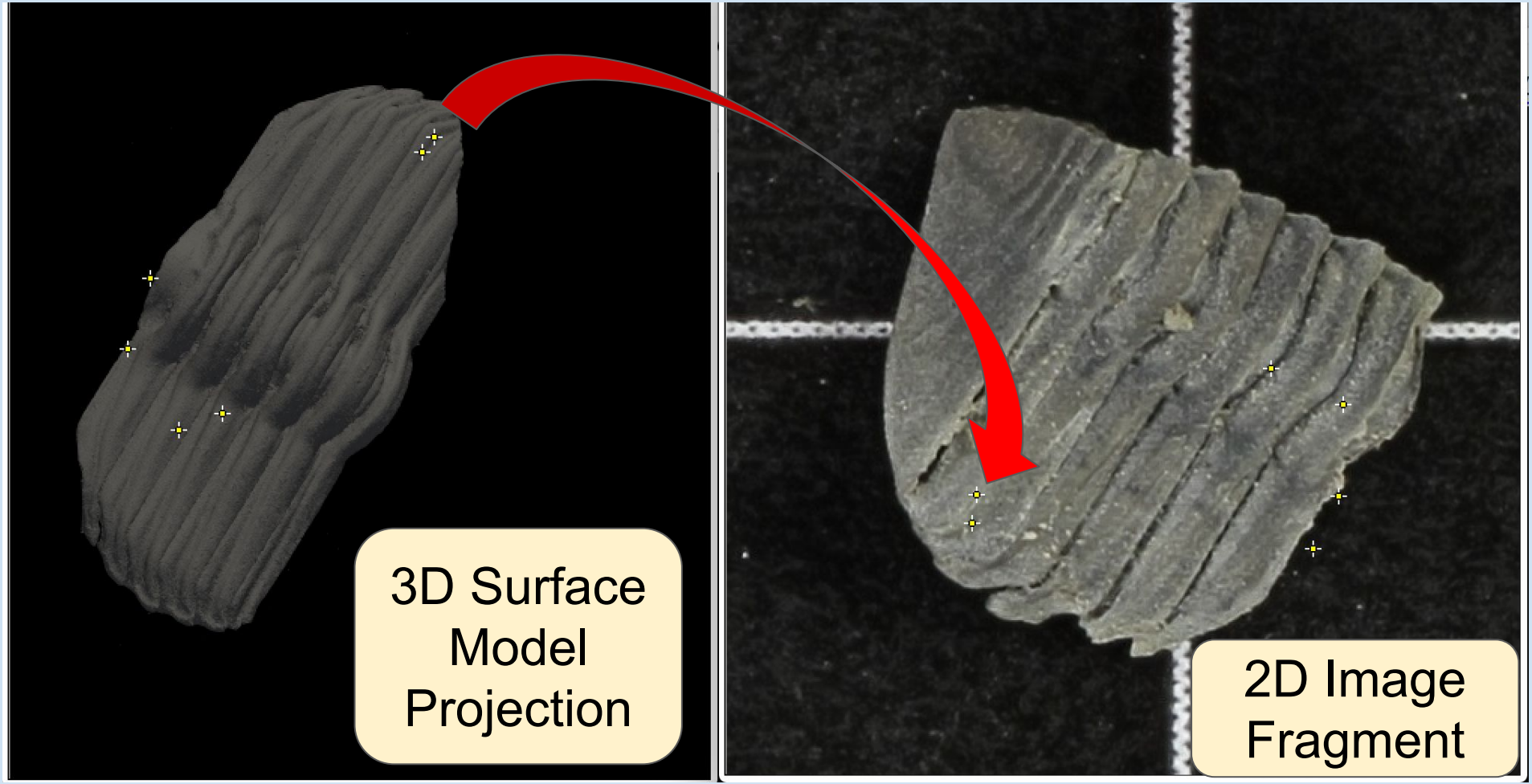
Head

Circular Holes

Feature Based Detection (MOPS)



Feature Based Detection - 3D Model to 2D image

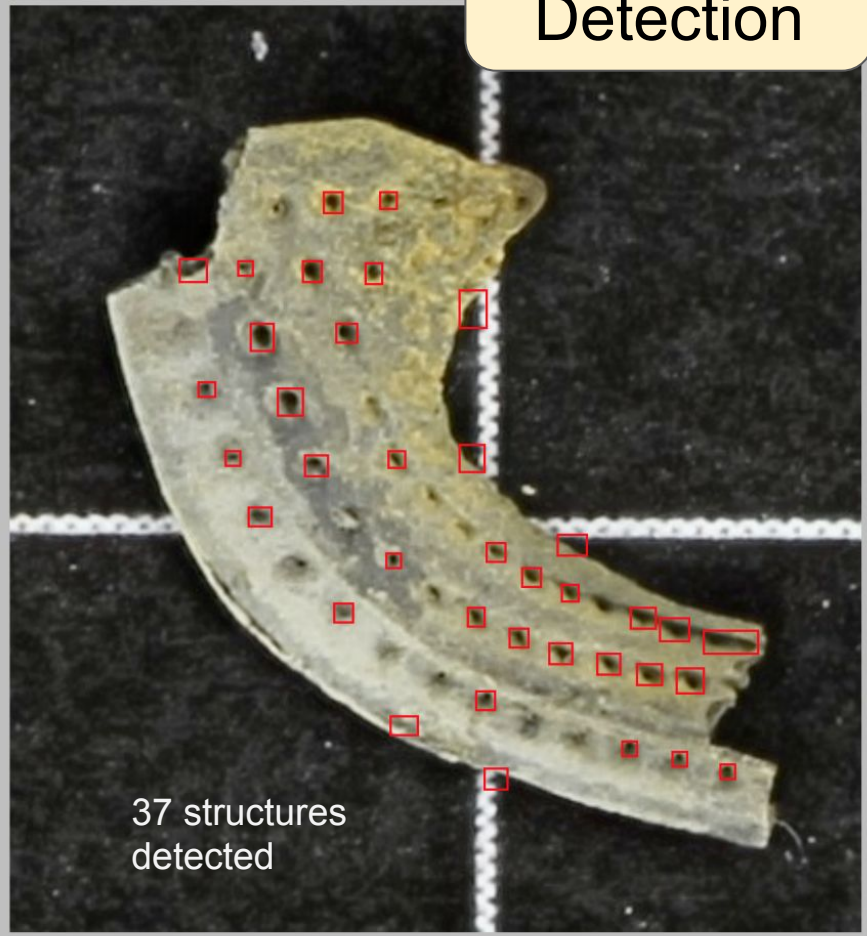


2D Image Fragment

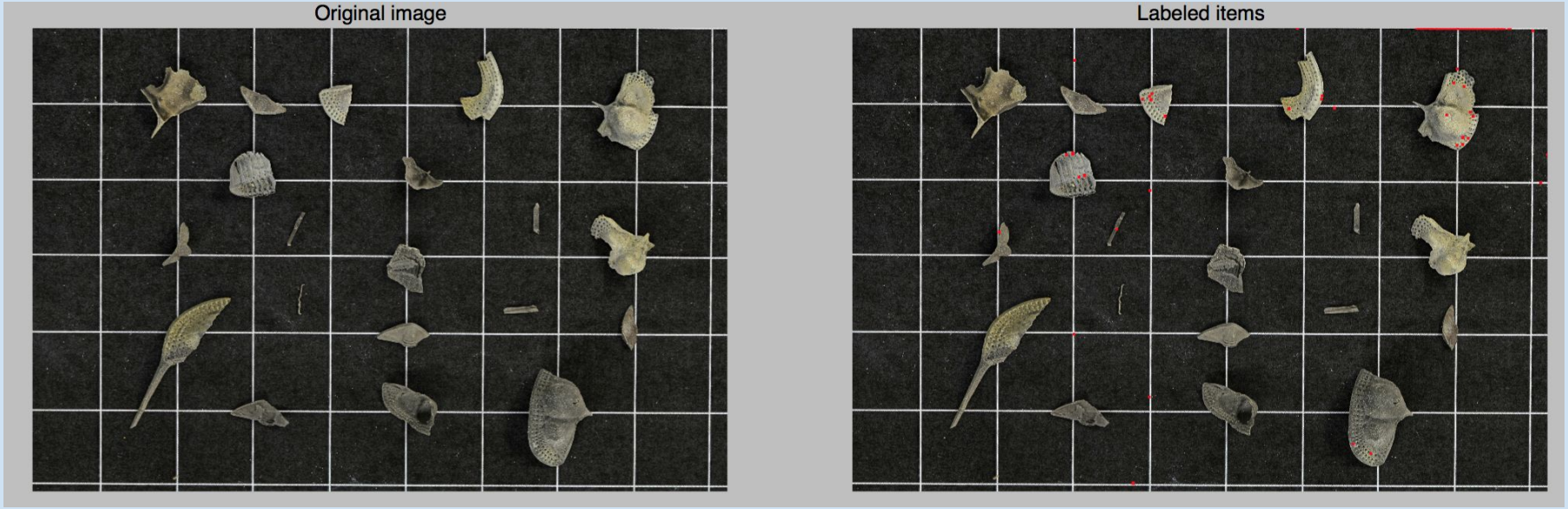
Original image

Hole Detection

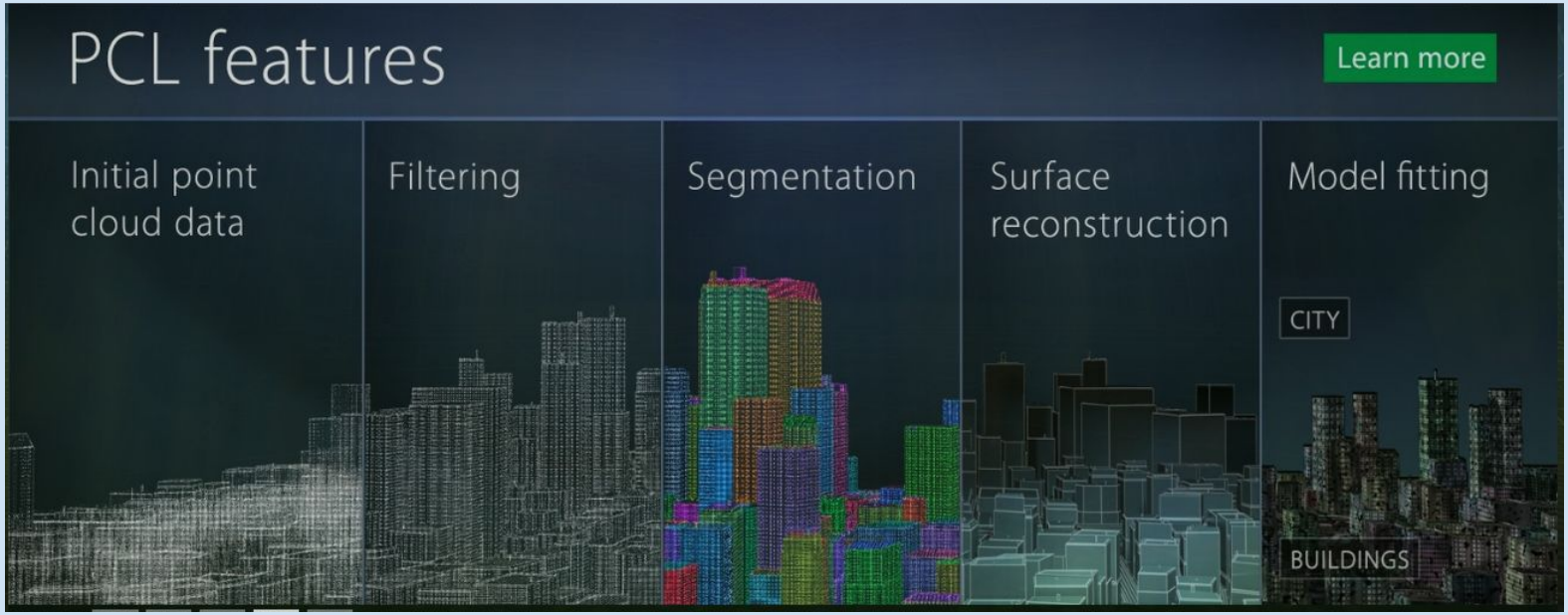
Labeled i



More Challenges → Future Work



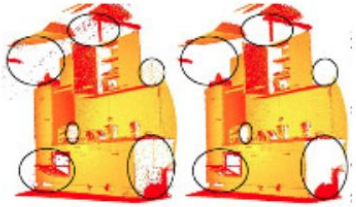
Other Explorations - Point Cloud Library



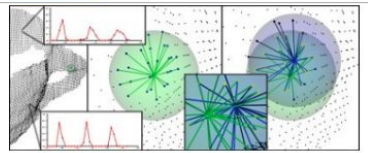
Other Explorations - Point Cloud Library

PCL is split in a number of modular libraries. The most important set of released PCL modules is shown below:

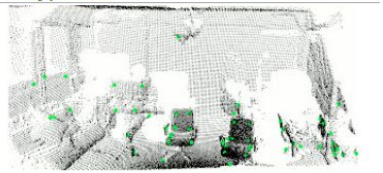
Filters



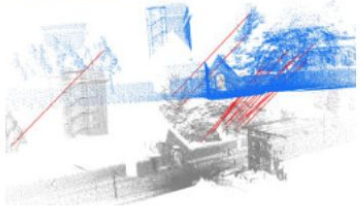
Features



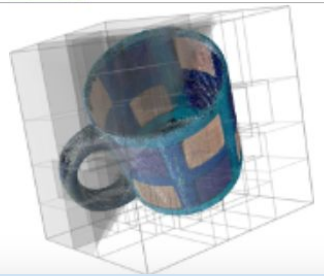
Keypoints



Registration



KdTree



Octree


Thank You!