

Kintinuous: Spatially Extended Kinect Fusion

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NUI MAYNOOTH
Oileán na hÉireann Mú Níod





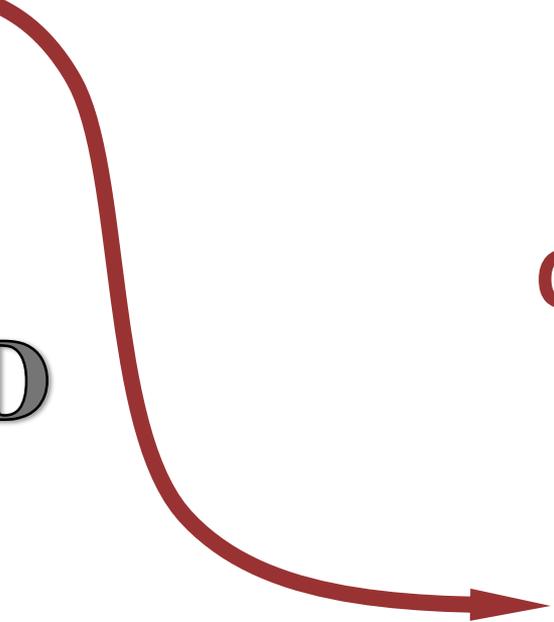


RGB



Colour Image

D



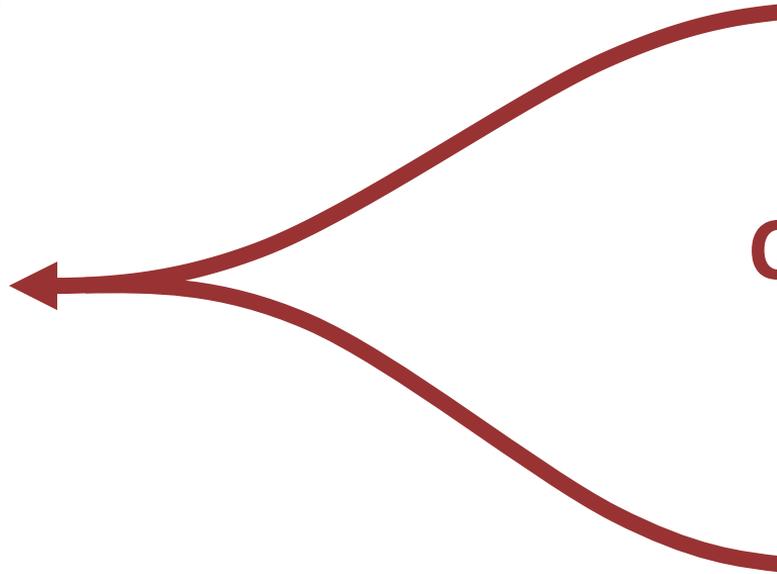
Depth Image

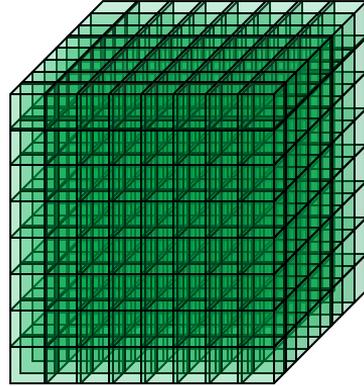


Colour Image



Depth Image

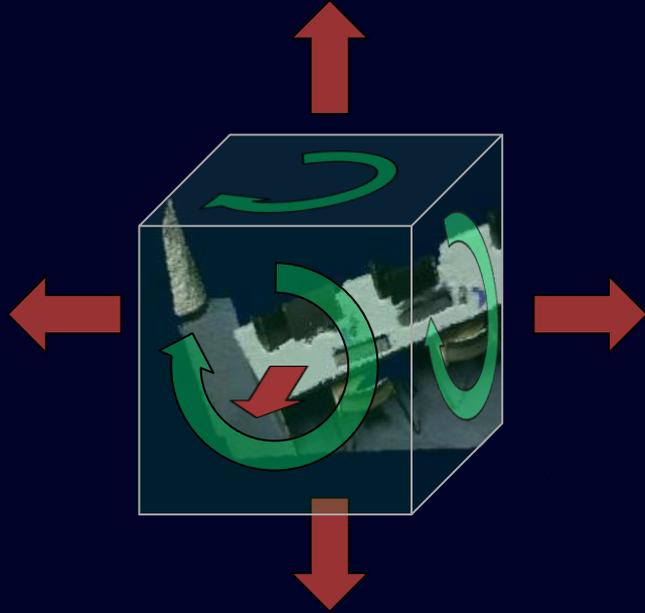




**Volumetric
Model**

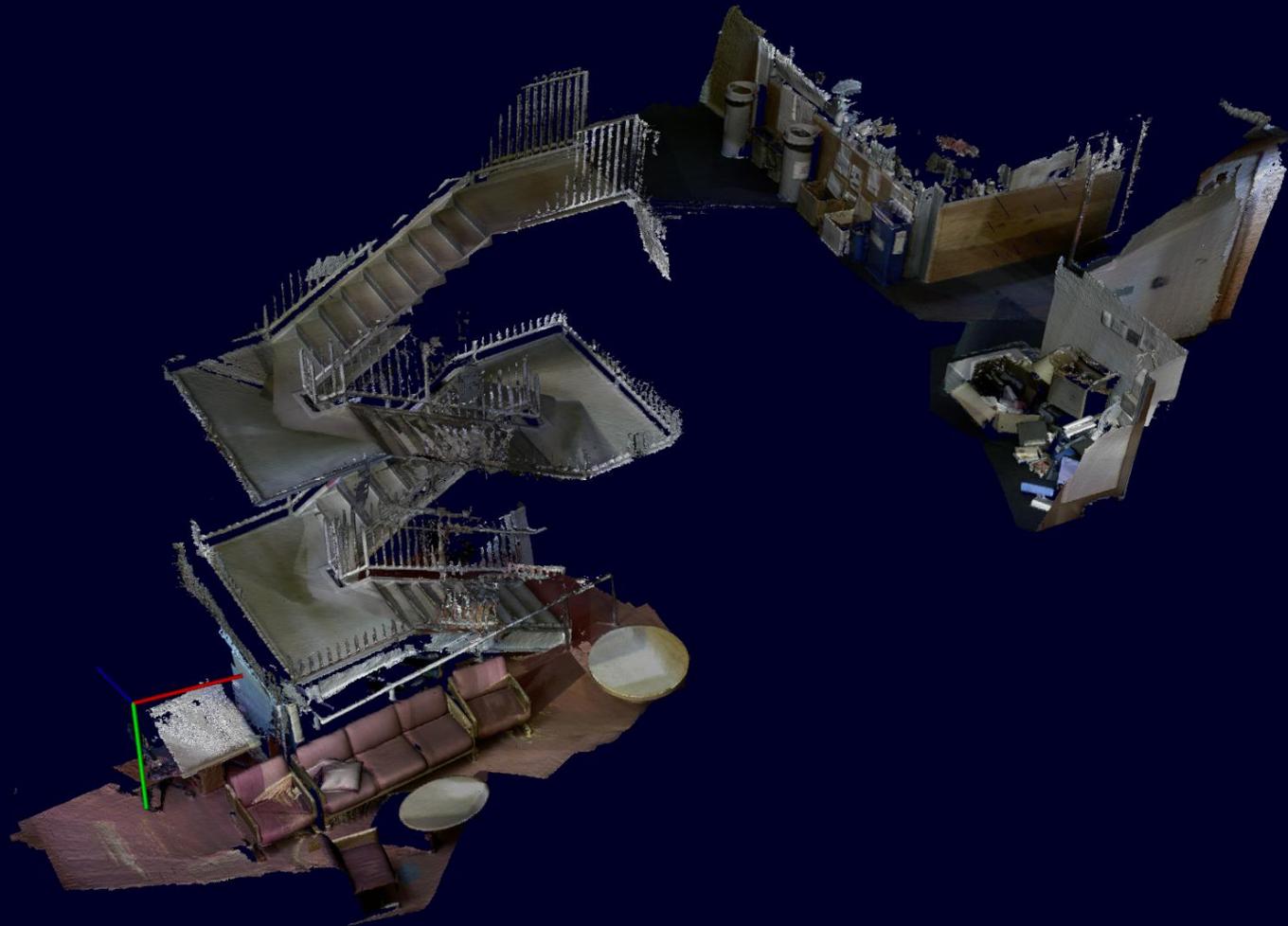


Kintinuous Motion



Continuous Motion

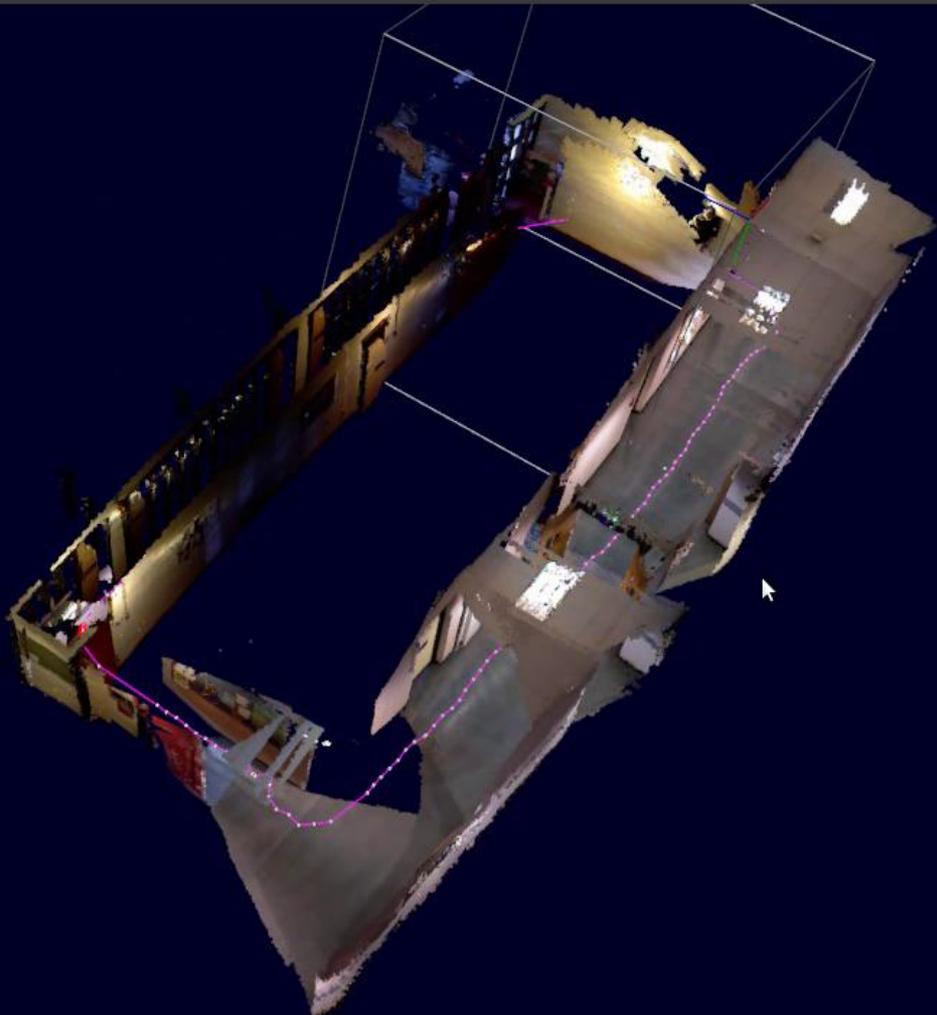




103.842MB

Transferred mesh slices: 239
Number of triangles: 2,643,734

123.5 FPS



23.9621MB
Drawn mesh up to: 171
Computed mesh up to: 171
Slice number: 171 (171)
Number of vertices: 1,570,380

Features

- Real-time
- Mesh Generation
- Not limited to “desk space”
- Adaptive odometry estimate
 - Dynamic switching from ICP to FOVIS visual odometry [Huang et al. '11]
- Fused model coloring
 - Also done by Newcombe et al.

Features “in the oven”

- Pose graph optimisation
 - Place recognition (Dbow [Gálvez-López & Tardós '11])
 - iSAM [Kaess et al. '08]
- Reintegration
 - Synthetic depth map approach
 - Mesh/point cloud to TSDF?
- Shape extraction
 - Fitting primitives like planes and curves

Source Code

- In discussion with NUI Maynooth
 - Ultimate IP owners
- Aim to put source back into PCL
 - Make freely available to research community
- A few months off