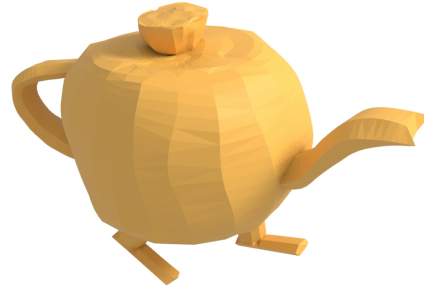
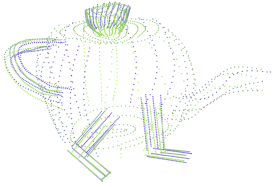
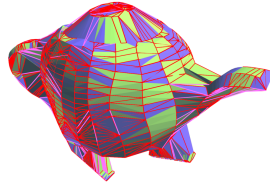


*Input**Our Result**Input*

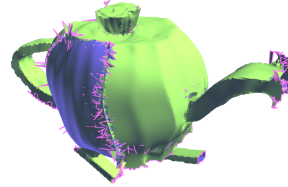
[Edelsbrunner and Mcke 1994]

[Öeztireli et al. 2009]

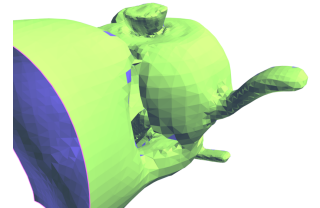
[Kazhdan and Hoppe 2013]

*Sparse point cloud*

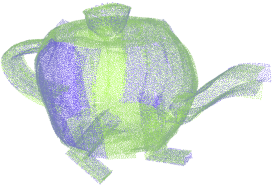
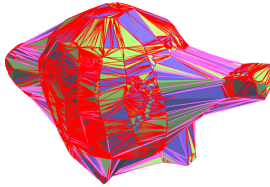
Components: 1; Non-manifold Edges: 5267 (56.5%); Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.



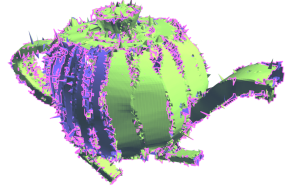
Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 44; Genus: 57.



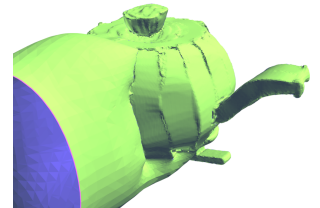
Components: 4; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 6.

*Dense point cloud*

Components: 1; Non-manifold Edges: 57310; (71.0%) Non-manifold Vertices: 5; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 218; Holes: Undetermined; Genus: Undetermined.



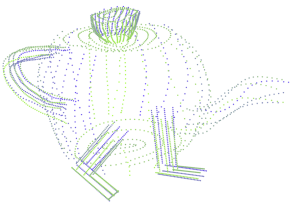
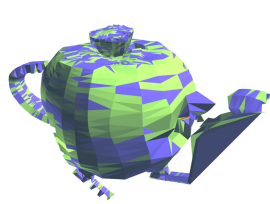
Components: 13; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 87.

Input

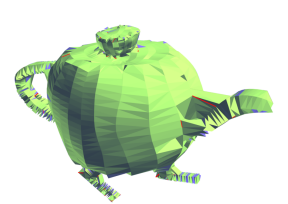
[Dey and Goswami 2003]

[Kolluri et al. 2004]

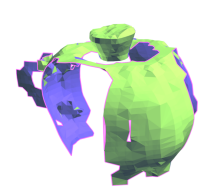
[Fuhrmann and Goesle 2014]

*Sparse point cloud*

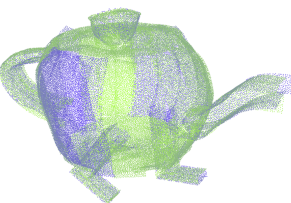
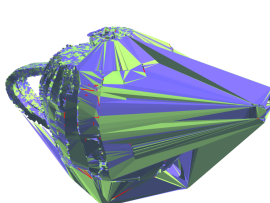
Components: 11; Non-manifold Edges: 11 (0.1%); Non-manifold Vertices: 27; Holes: Undetermined; Genus: Undetermined.



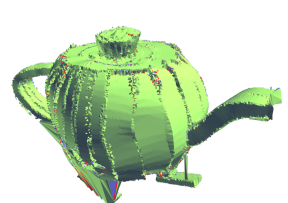
Components: 26; Non-manifold Edges: 122 (1.3%); Non-manifold Vertices: 85; Holes: Undetermined; Genus: Undetermined.



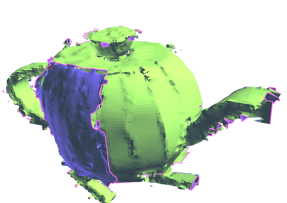
Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 6; Genus: 2.

*Dense point cloud*

Components: 80; Non-manifold Edges: 188; (0.1%) Non-manifold Vertices: 412; Holes: Undetermined; Genus: Undetermined.



Components: 67; Non-manifold Edges: 888; (0.5%) Non-manifold Vertices: 703; Holes: Undetermined; Genus: Undetermined.



Components: 35; Non-manifold Edges: 35; (0.0%) Non-manifold Vertices: 4; Holes: Undetermined; Genus: Undetermined.



Input



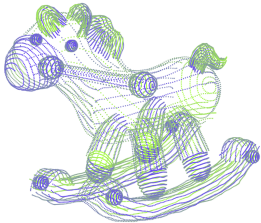
Our Result

Input

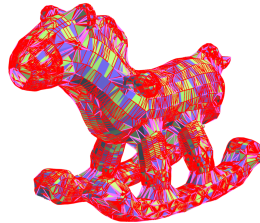
[Edelsbrunner and Mcke 1994]

[Öeztireli et al. 2009]

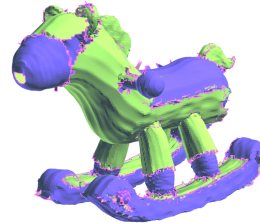
[Kazhdan and Hoppe 2013]



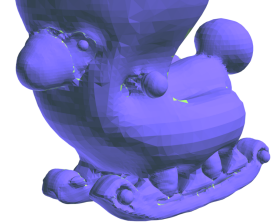
Sparse point cloud



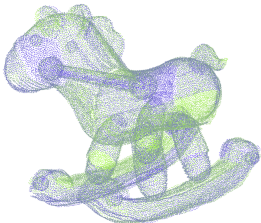
Components: 2; Non-manifold Edges: 47458 (56.5%); Non-manifold Vertices: 11; Holes: Undetermined; Genus: Undetermined.



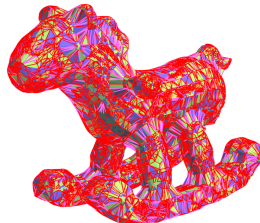
Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 101; Holes: Undetermined; Genus: Undetermined.



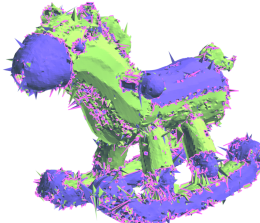
Components: 20; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 48.



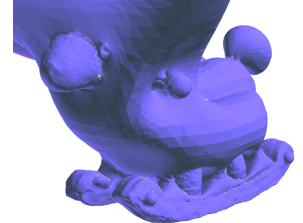
Dense point cloud



Components: 1; Non-manifold Edges: 105229; (60.2%) Non-manifold Vertices: 59; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 255; Holes: Undetermined; Genus: Undetermined.



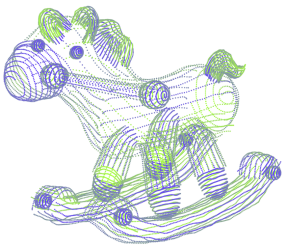
Components: 38; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 152.

Input

[Dey and Goswami 2003]

[Kolluri et al. 2004]

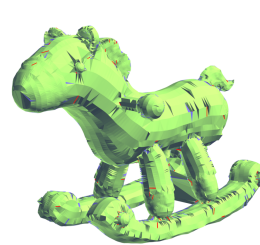
[Fuhrmann and Goesle 2014]



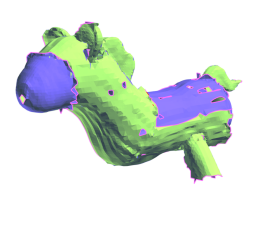
Sparse point cloud



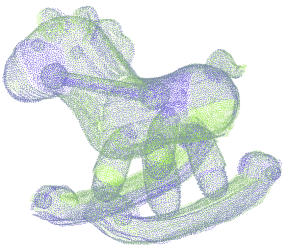
Components: 45; Non-manifold Edges: 62 (0.1%); Non-manifold Vertices: 82; Holes: Undetermined; Genus: Undetermined.



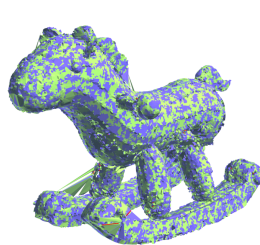
Components: 5; Non-manifold Edges: 415 (0.7%); Non-manifold Vertices: 281; Holes: Undetermined; Genus: Undetermined.



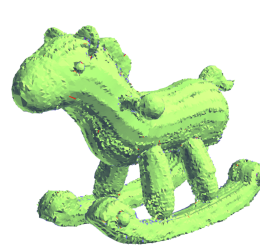
Components: 9; Non-manifold Edges: 20 (0.0%); Non-manifold Vertices: 2; Holes: Undetermined; Genus: Undetermined.



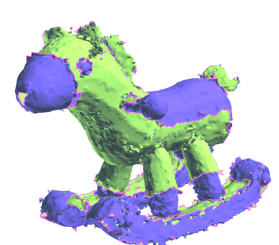
Dense point cloud



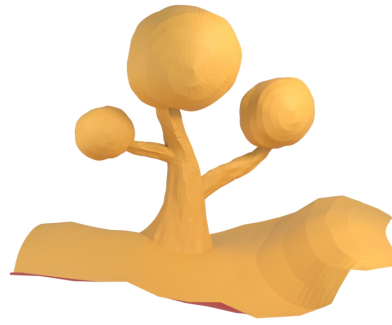
Components: 71; Non-manifold Edges: 76; (0.1%) Non-manifold Vertices: 169; Holes: Undetermined; Genus: Undetermined.



Components: 11; Non-manifold Edges: 296; (0.3%) Non-manifold Vertices: 239; Holes: Undetermined; Genus: Undetermined.



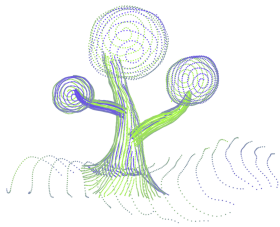
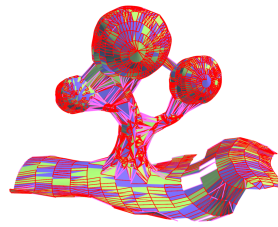
Components: 48; Non-manifold Edges: 195; (0.1%) Non-manifold Vertices: 10; Holes: Undetermined; Genus: Undetermined.

*Input**Our Result**Input*

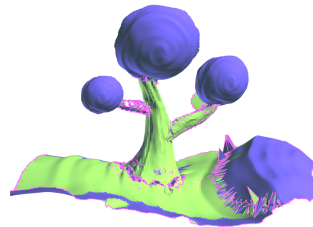
[Edelsbrunner and Mcke 1994]

[Öeztireli et al. 2009]

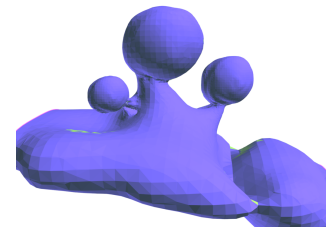
[Kazhdan and Hoppe 2013]

*Sparse point cloud*

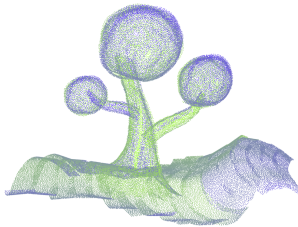
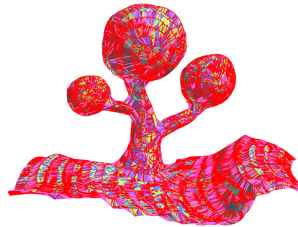
Components: 2; Non-manifold Edges: 17676 (59.0%); Non-manifold Vertices: 4; Holes: Undetermined; Genus: Undetermined.



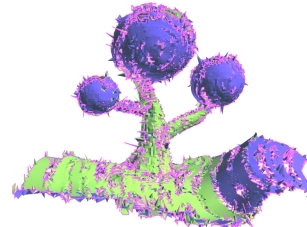
Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 62; Holes: Undetermined; Genus: Undetermined.



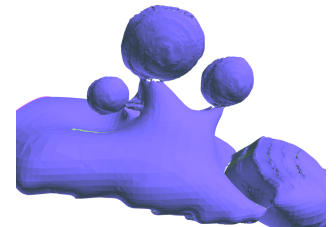
Components: 4; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 2; Genus: 48.

*Dense point cloud*

Components: 2; Non-manifold Edges: 108631; (53.8%) Non-manifold Vertices: 72; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 475; Holes: Undetermined; Genus: Undetermined.



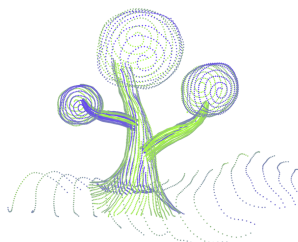
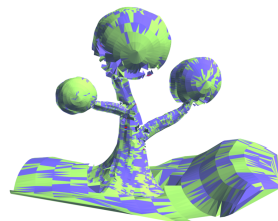
Components: 27; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 2; Genus: 116.

Input

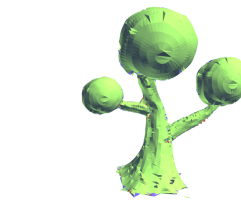
[Dey and Goswami 2003]

[Kolluri et al. 2004]

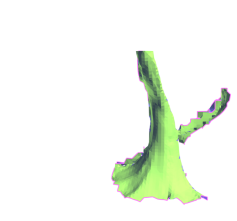
[Fuhrmann and Goesle 2014]

*Sparse point cloud*

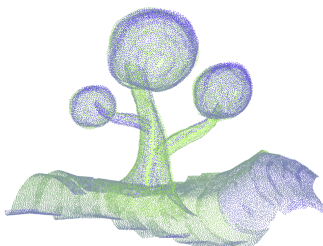
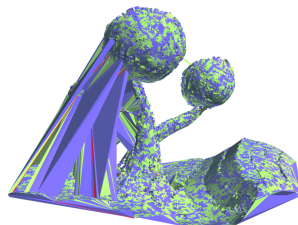
Components: 14; Non-manifold Edges: 21 (0.1%); Non-manifold Vertices: 34; Holes: Undetermined; Genus: Undetermined.



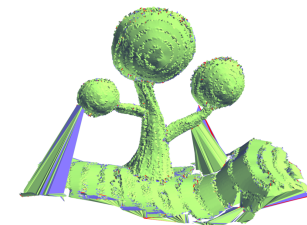
Components: 5; Non-manifold Edges: 86 (0.3%); Non-manifold Vertices: 62; Holes: Undetermined; Genus: Undetermined.



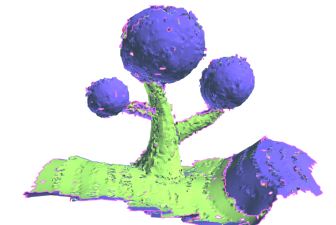
Components: 6; Non-manifold Edges: 23 (0.2%); Non-manifold Vertices: 0; Holes: Undetermined; Genus: Undetermined.

*Dense point cloud*

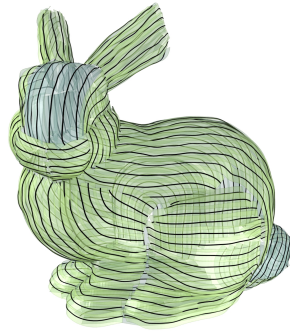
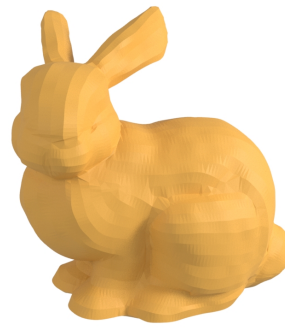
Components: 110; Non-manifold Edges: 184; (0.1%) Non-manifold Vertices: 383; Holes: Undetermined; Genus: Undetermined.



Components: 94; Non-manifold Edges: 647; (0.4%) Non-manifold Vertices: 504; Holes: Undetermined; Genus: Undetermined.



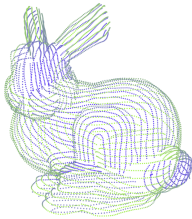
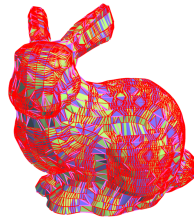
Components: 45; Non-manifold Edges: 339; (0.1%) Non-manifold Vertices: 17; Holes: Undetermined; Genus: Undetermined.

*Input**Our Result**Input*

[Edelsbrunner and Mcke 1994]

[Öeztireli et al. 2009]

[Kazhdan and Hoppe 2013]

*Sparse point cloud*

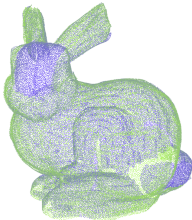
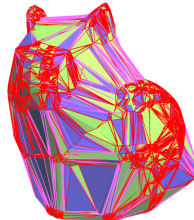
Components: 1; Non-manifold Edges: 23586 (62.9%); Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.



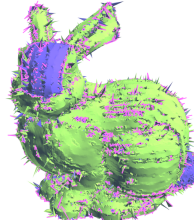
Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 41; Genus: 51.



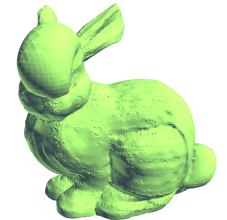
Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 9.

*Dense point cloud*

Components: 1; Non-manifold Edges: 48352 (69.8%); Non-manifold Vertices: 3; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 54; Holes: Undetermined; Genus: Undetermined.



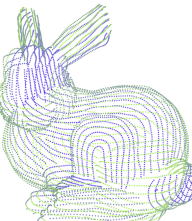
Components: 2; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 18.

Input

[Dey and Goswami 2003]

[Kolluri et al. 2004]

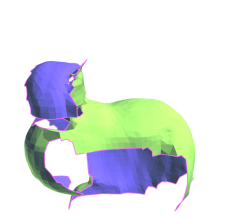
[Fuhrmann and Goesle 2014]

*Sparse point cloud*

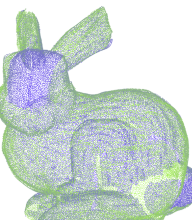
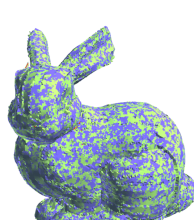
Components: 1; Non-manifold Edges: 1 (0.0%); Non-manifold Vertices: 2; Holes: Undetermined; Genus: Undetermined.



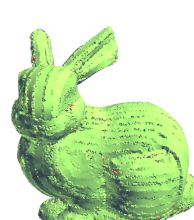
Components: 2; Non-manifold Edges: 24 (0.1%); Non-manifold Vertices: 19; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 6 (0.1%); Non-manifold Vertices: 0; Holes: Undetermined; Genus: Undetermined.

*Dense point cloud*

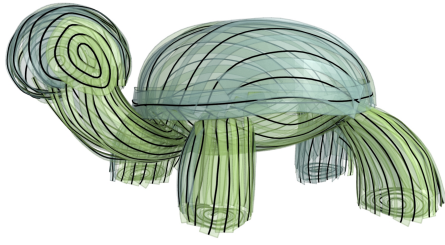
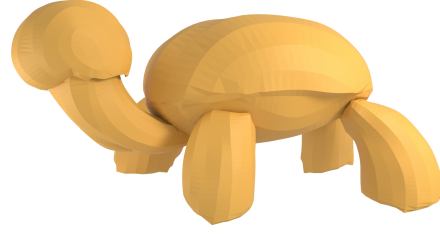
Components: 15; Non-manifold Edges: 25 (0.0%); Non-manifold Vertices: 70; Holes: Undetermined; Genus: Undetermined.



Components: 21; Non-manifold Edges: 393 (0.3%); Non-manifold Vertices: 244; Holes: Undetermined; Genus: Undetermined.



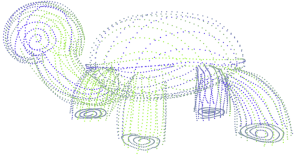
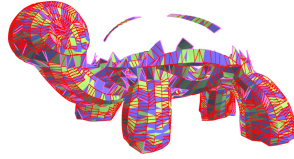
Components: 19; Non-manifold Edges: 28 (0.0%); Non-manifold Vertices: 2; Holes: Undetermined; Genus: Undetermined.

*Input**Our Result**Input*

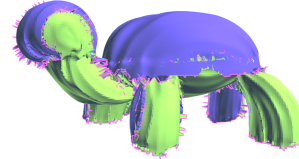
[Edelsbrunner and Mcke 1994]

[Öeztireli et al. 2009]

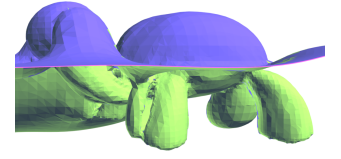
[Kazhdan and Hoppe 2013]

*Sparse point cloud*

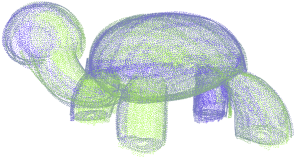
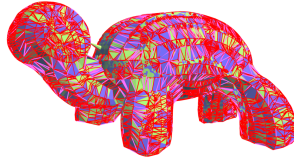
Components: 3; Non-manifold Edges: 11041 (55.1%); Non-manifold Vertices: 6; Holes: Undetermined; Genus: Undetermined.



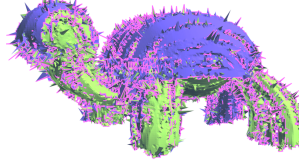
Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 3; Holes: Undetermined; Genus: Undetermined.



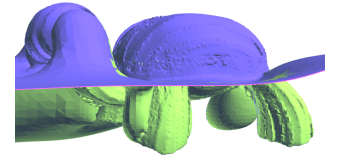
Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 24.

*Dense point cloud*

Components: 1; Non-manifold Edges: 94597; (55.9%) Non-manifold Vertices: 71; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 321; Holes: Undetermined; Genus: Undetermined.



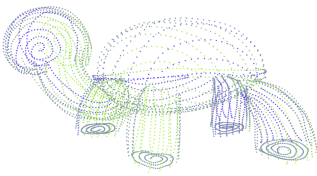
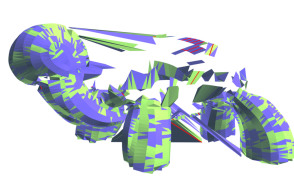
Components: 39; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 179.

Input

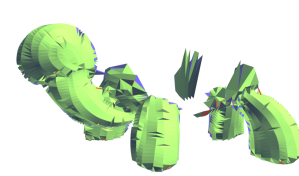
[Dey and Goswami 2003]

[Kolluri et al. 2004]

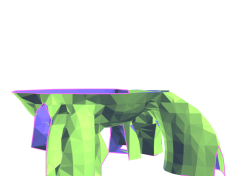
[Fuhrmann and Goesele 2014]

*Sparse point cloud*

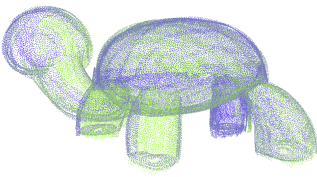
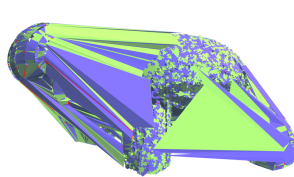
Components: 42; Non-manifold Edges: 29 (0.2%); Non-manifold Vertices: 33; Holes: Undetermined; Genus: Undetermined.



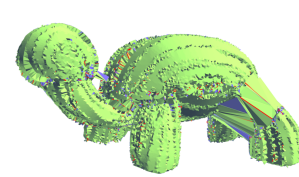
Components: 10; Non-manifold Edges: 53 (0.5%); Non-manifold Vertices: 31; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 2 (0.1%); Non-manifold Vertices: 0; Holes: Undetermined; Genus: Undetermined.

*Dense point cloud*

Components: 153; Non-manifold Edges: 205; (0.1%) Non-manifold Vertices: 552; Holes: Undetermined; Genus: Undetermined.



Components: 72; Non-manifold Edges: 1060; (0.9%) Non-manifold Vertices: 841; Holes: Undetermined; Genus: Undetermined.



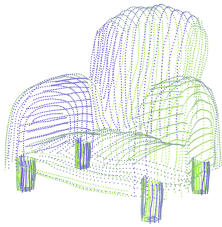
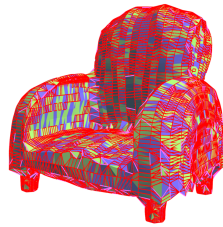
Components: 232; Non-manifold Edges: 976; (0.1%) Non-manifold Vertices: 34; Holes: Undetermined; Genus: Undetermined.

*Input**Our Result**Input*

[Edelsbrunner and Mcke 1994]

[Öeztireli et al. 2009]

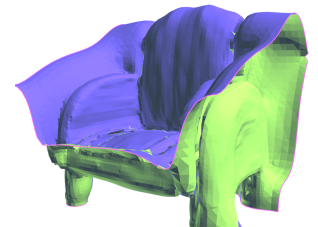
[Kazhdan and Hoppe 2013]

*Sparse point cloud*

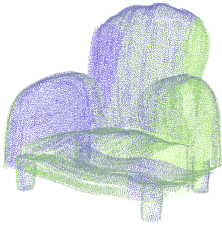
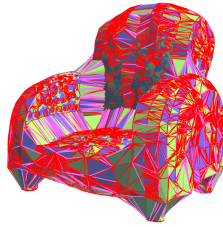
Components: 1; Non-manifold Edges: 29756 (72.2%); Non-manifold Vertices: 4; Holes: Undetermined; Genus: Undetermined.



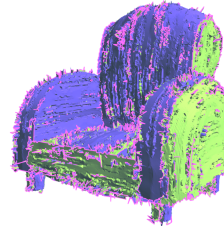
Components: 2; Non-manifold Edges: 0; Non-manifold Vertices: 6; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 3; Genus: 29.

*Dense point cloud*

Components: 1; Non-manifold Edges: 75500; (56.1%) Non-manifold Vertices: 38; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 50; Holes: Undetermined; Genus: Undetermined.



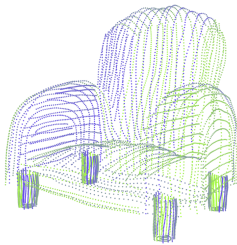
Components: 4; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 133.

Input

[Dey and Goswami 2003]

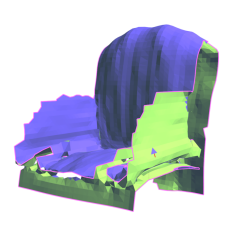
[Kolluri et al. 2004]

[Fuhrmann and Goesle 2014]

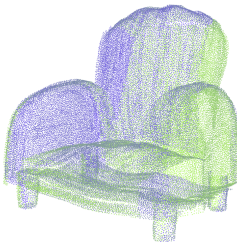
*Sparse point cloud*

Components: 4; Non-manifold Edges: 16 (0.1%); Non-manifold Vertices: 15; Holes: Undetermined; Genus: Undetermined.

Error during execution



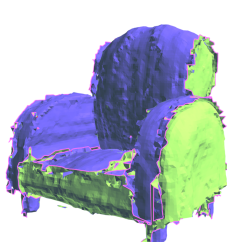
Components: 2; Non-manifold Edges: 8 (0.1%); Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.

*Dense point cloud*

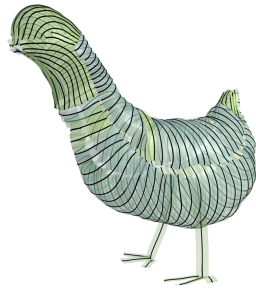
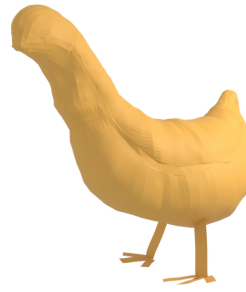
Components: 77; Non-manifold Edges: 98; (0.1%) Non-manifold Vertices: 195; Holes: Undetermined; Genus: Undetermined.



Components: 22; Non-manifold Edges: 448; (0.3%) Non-manifold Vertices: 255; Holes: Undetermined; Genus: Undetermined.



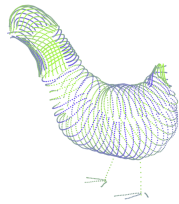
Components: 18; Non-manifold Edges: 82; (0.1%) Non-manifold Vertices: 13; Holes: Undetermined; Genus: Undetermined.

*Input**Our Result**Input*

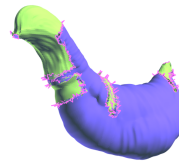
[Edelsbrunner and Mcke 1994]

[Öeztireli et al. 2009]

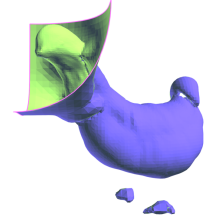
[Kazhdan and Hoppe 2013]

*Sparse point cloud*

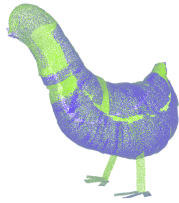
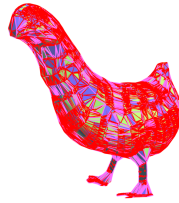
Components: 3; Non-manifold Edges: 17857 (64.9%); Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 12; Genus: 96.



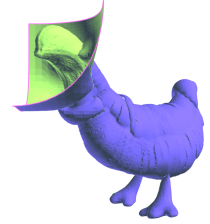
Components: 4; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 17.

*Dense point cloud*

Components: 1; Non-manifold Edges: 144437; (67.5%) Non-manifold Vertices: 48; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 207; Holes: Undetermined; Genus: Undetermined.



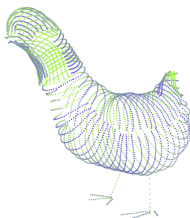
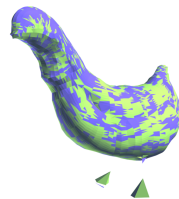
Components: 5; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 78.

Input

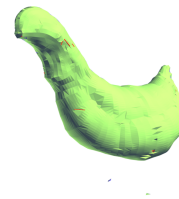
[Dey and Goswami 2003]

[Kolluri et al. 2004]

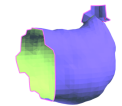
[Fuhrmann and Goesle 2014]

*Sparse point cloud*

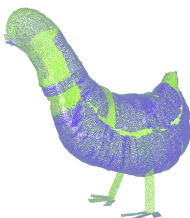
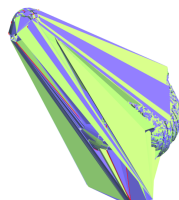
Components: 4; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 0; Genus: 0.



Components: 3; Non-manifold Edges: 19 (0.1%); Non-manifold Vertices: 6; Holes: Undetermined; Genus: Undetermined.



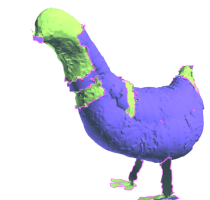
Components: 1; Non-manifold Edges: 2 (0.0%); Non-manifold Vertices: 0; Holes: Undetermined; Genus: Undetermined.

*Dense point cloud*

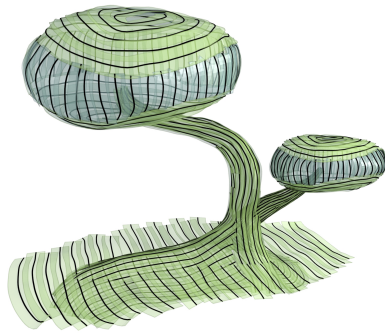
Components: 55; Non-manifold Edges: 249; (0.2%) Non-manifold Vertices: 435; Holes: Undetermined; Genus: Undetermined.



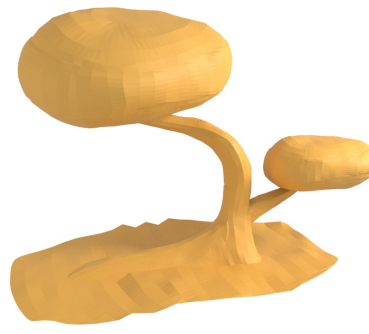
Components: 47; Non-manifold Edges: 377; (0.3%) Non-manifold Vertices: 268; Holes: Undetermined; Genus: Undetermined.



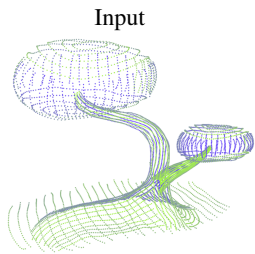
Components: 19; Non-manifold Edges: 91; (0.1%) Non-manifold Vertices: 6; Holes: Undetermined; Genus: Undetermined.



Input

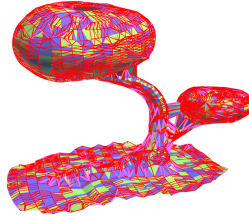


Our Result



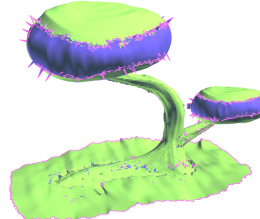
Input

[Edelsbrunner and Mcke 1994]



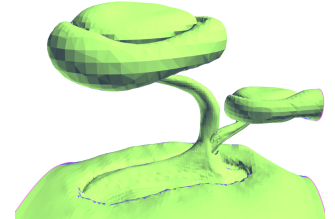
Components: 1; Non-manifold Edges: 21224 (59.5%); Non-manifold Vertices: 4; Holes: Undetermined; Genus: Undetermined.

[Öeztireli et al. 2009]

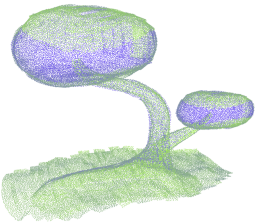


Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 37; Holes: Undetermined; Genus: Undetermined.

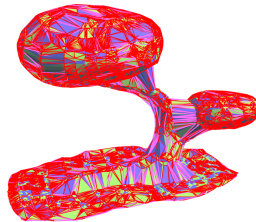
[Kazhdan and Hoppe 2013]



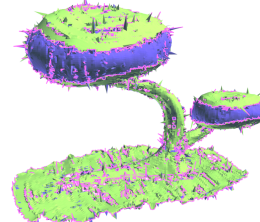
Components: 6; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 2; Genus: 22.



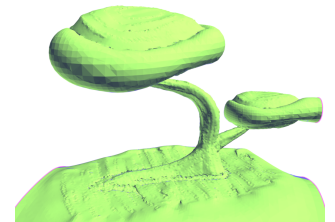
Dense point cloud



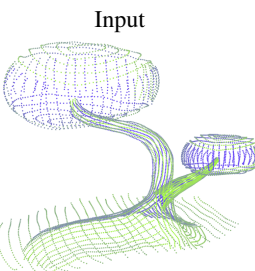
Components: 1; Non-manifold Edges: 95810; (66.4%) Non-manifold Vertices: 22; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 177; Holes: Undetermined; Genus: Undetermined.

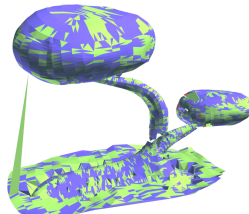


Components: 10; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 2; Genus: 172.



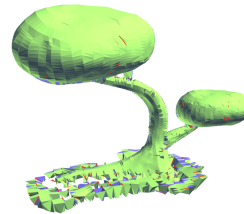
Input

[Dey and Goswami 2003]



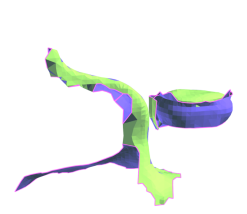
Components: 11; Non-manifold Edges: 31 (0.1%); Non-manifold Vertices: 46; Holes: Undetermined; Genus: Undetermined.

[Kolluri et al. 2004]

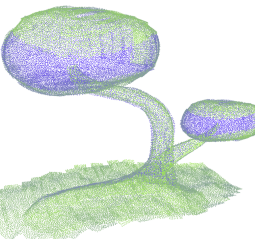


Components: 8; Non-manifold Edges: 188 (0.8%); Non-manifold Vertices: 104; Holes: Undetermined; Genus: Undetermined.

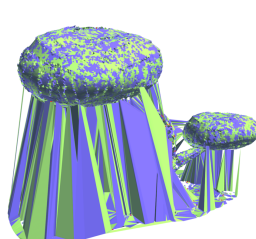
[Fuhrmann and Goesle 2014]



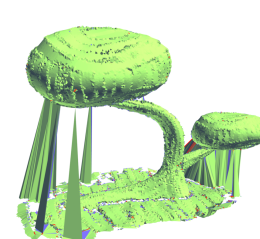
Components: 2; Non-manifold Edges: 2 (0.0%); Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.



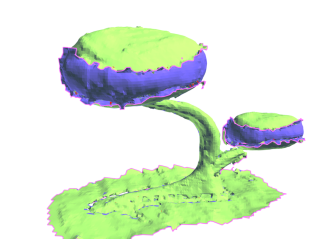
Dense point cloud



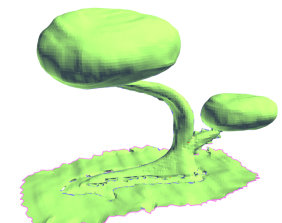
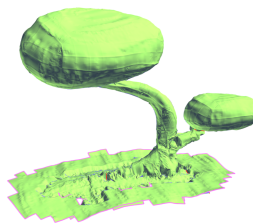
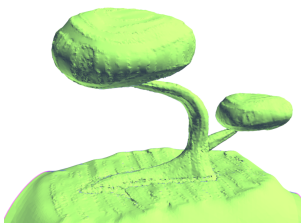
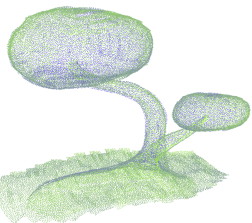
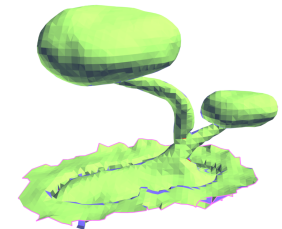
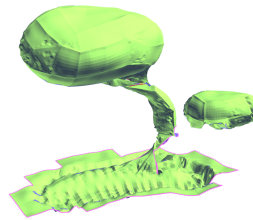
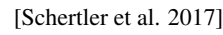
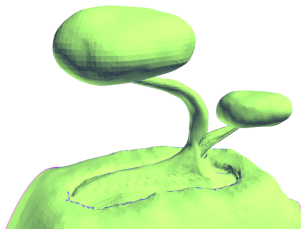
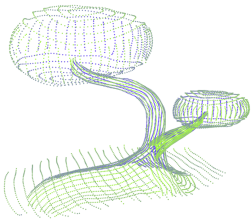
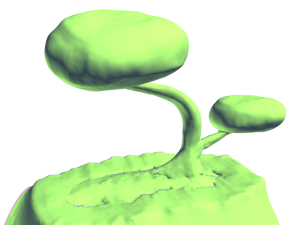
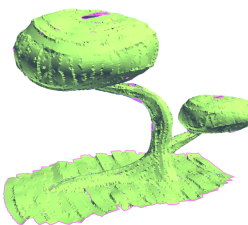
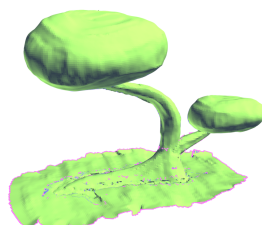
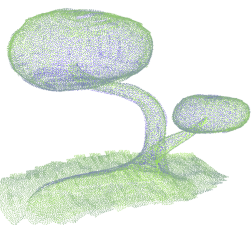
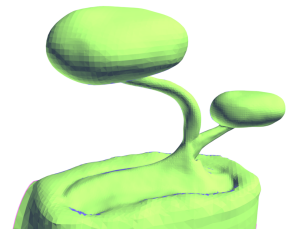
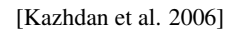
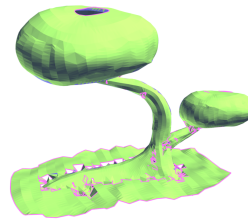
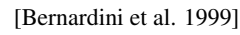
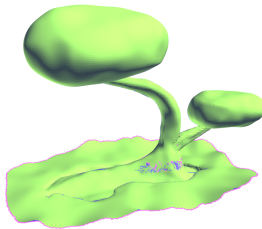
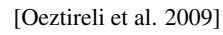
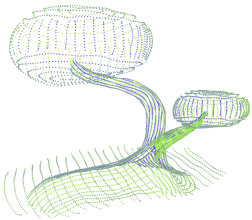
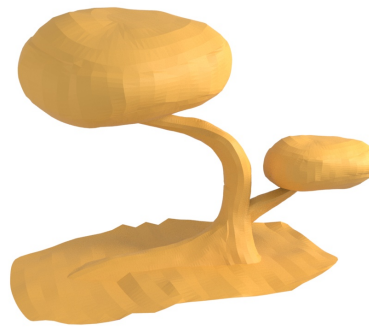
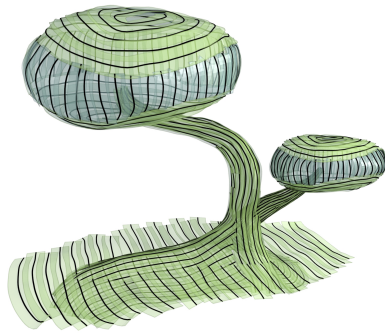
Components: 138; Non-manifold Edges: 172; (0.1%) Non-manifold Vertices: 325; Holes: Undetermined; Genus: Undetermined.

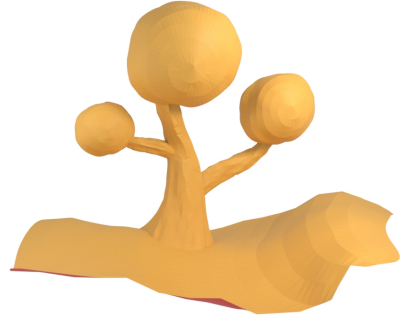


Components: 95; Non-manifold Edges: 481; (0.3%) Non-manifold Vertices: 495; Holes: Undetermined; Genus: Undetermined.



Components: 7; Non-manifold Edges: 65; (0.1%) Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.

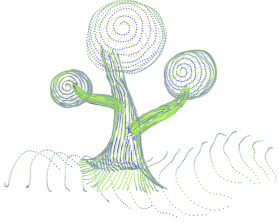
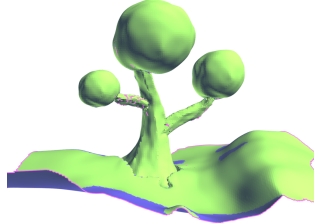


*Input**Our Result**Input*

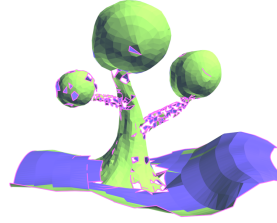
[Oeztireli et al. 2009]

[Bernardini et al. 1999]

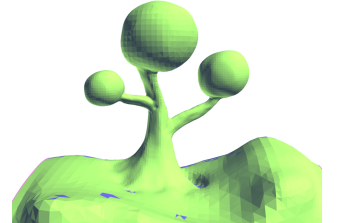
[Kazhdan et al. 2006]

*Sparse point cloud with fixed normals*

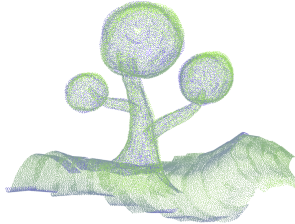
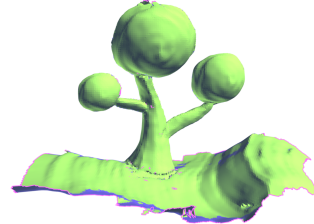
Components: 1; Non-manifold Edges: 0 ; Non-manifold Vertices: 55; Holes: Undetermined; Genus: Undetermined.



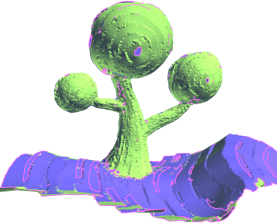
Components: 109; Non-manifold Edges: 0 ; Non-manifold Vertices: 173; Holes: Undetermined; Genus: Undetermined.



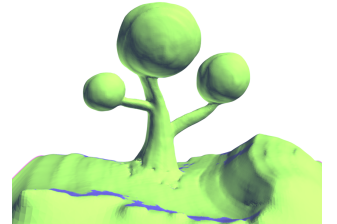
Components: 1; Non-manifold Edges: 0 ; Non-manifold Vertices: 0; Holes: 1; Genus: 0.

*Dense point cloud with fixed normals*

Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0; Non-manifold Vertices: 651; Holes: Undetermined; Genus: Undetermined.



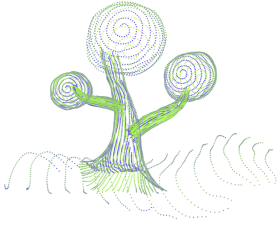
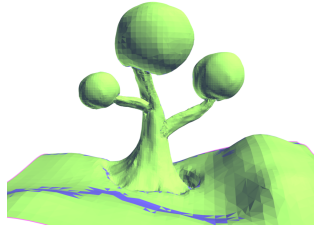
Components: 4; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 1.

Input

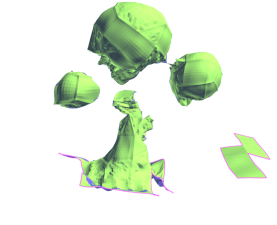
[Kazhdan and Hoppe 2013]

[Schertler et al. 2017]

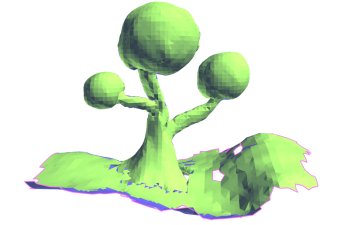
[Fuhrmann and Goesele 2014]

*Sparse point cloud with fixed normals*

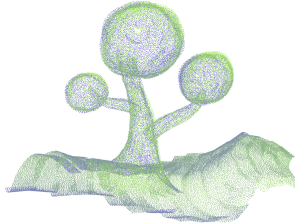
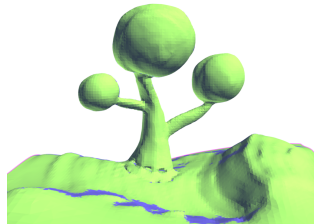
Components: 1; Non-manifold Edges: 0 ; Non-manifold Vertices: 0; Holes: 1; Genus: 17.



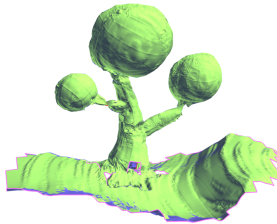
Components: 5; Non-manifold Edges: 0 ; Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.



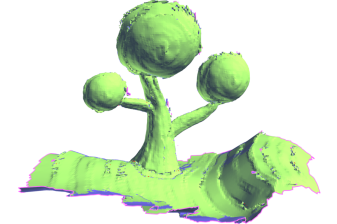
Components: 3; Non-manifold Edges: 7 (0.0%); Non-manifold Vertices: 0; Holes: Undetermined; Genus: Undetermined.

*Dense point cloud with fixed normals*

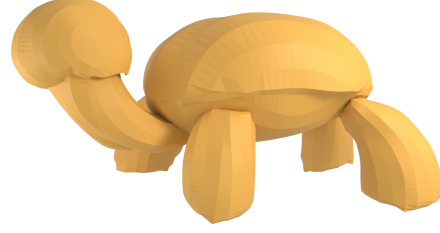
Components: 4; Non-manifold Edges: 0; Non-manifold Vertices: 0; Holes: 1; Genus: 12.



Components: 3; Non-manifold Edges: 44; (0.0%) Non-manifold Vertices: 6; Holes: Undetermined; Genus: Undetermined.



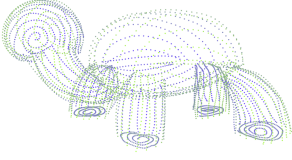
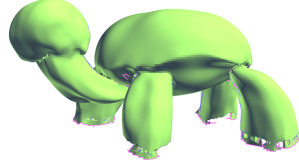
Components: 75; Non-manifold Edges: 146; (0.1%) Non-manifold Vertices: 1; Holes: Undetermined; Genus: Undetermined.

*Input**Our Result**Input*

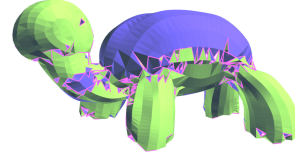
[Oeztireli et al. 2009]

[Bernardini et al. 1999]

[Kazhdan et al. 2006]

*Sparse point cloud with fixed normals*

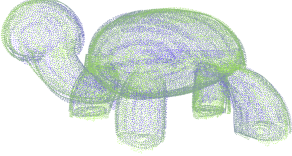
Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 25;
Genus: 35.



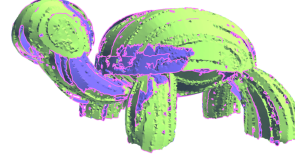
Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 371; Holes: Un-
determined; Genus: Undetermined.



Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 0;
Genus: 0.

*Dense point cloud with fixed normals*

Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 52;
Genus: 55.



Components: 8; Non-manifold Edges: 0;
Non-manifold Vertices: 1208; Holes: Un-
determined; Genus: Undetermined.



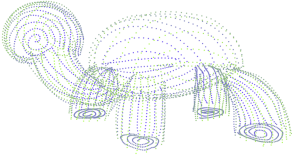
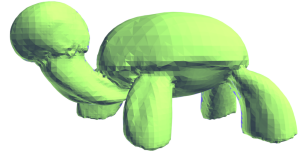
Components: 1; Non-manifold Edges:
0; Non-manifold Vertices: 0; Holes: 0;
Genus: 0.

Input

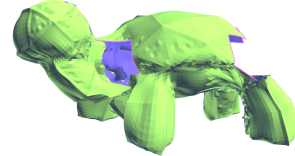
[Kazhdan and Hoppe 2013]

[Schertler et al. 2017]

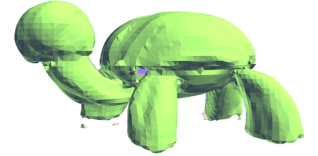
[Fuhrmann and Gesele 2014]

*Sparse point cloud with fixed normals*

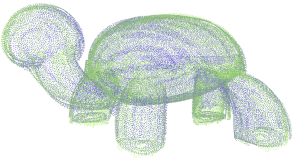
Components: 2; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 0;
Genus: 1.



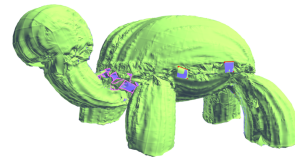
Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 2; Holes: Un-
determined; Genus: Undetermined.



Components: 15; Non-manifold Edges: 6
(0.0%); Non-manifold Vertices: 1; Holes:
Undetermined; Genus: Undetermined.

*Dense point cloud with fixed normals*

Components: 36; Non-manifold Edges:
0; Non-manifold Vertices: 0; Holes: 0;
Genus: 75.



Components: 5; Non-manifold Edges:
37; (0.0%) Non-manifold Vertices: 19;
Holes: Undetermined; Genus: Undeter-
mined.



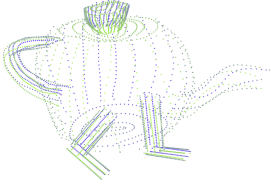
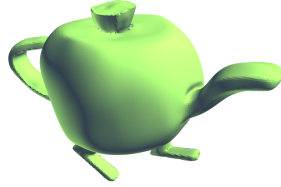
Components: 35; Non-manifold Edges:
90; (0.1%) Non-manifold Vertices: 2;
Holes: Undetermined; Genus: Undeter-
mined.

*Input**Our Result**Input*

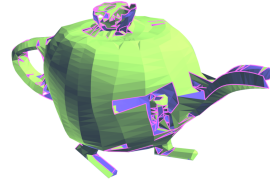
[Oeztireli et al. 2009]

[Bernardini et al. 1999]

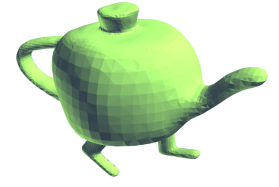
[Kazhdan et al. 2006]

*Sparse point cloud with fixed normals*

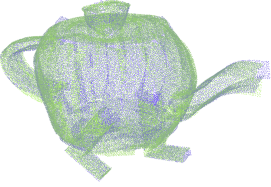
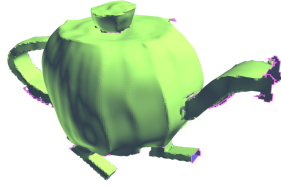
Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 30;
Genus: 8.



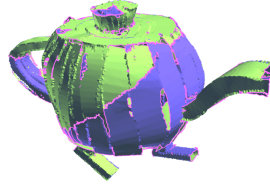
Components: 3; Non-manifold Edges: 0;
Non-manifold Vertices: 148; Holes: Un-
determined; Genus: Undetermined.



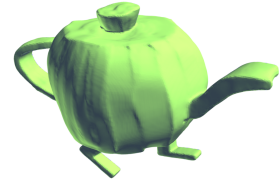
Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 0;
Genus: 1.

*Dense point cloud with fixed normals*

Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 49;
Genus: 29.



Components: 8; Non-manifold Edges: 0;
Non-manifold Vertices: 786; Holes: Un-
determined; Genus: Undetermined.



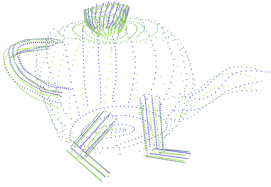
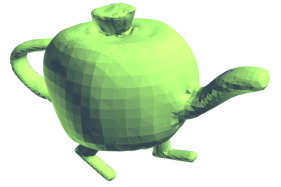
Components: 1; Non-manifold Edges:
0; Non-manifold Vertices: 0; Holes: 0;
Genus: 1.

Input

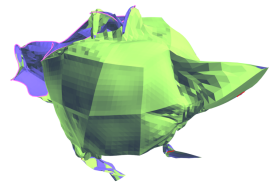
[Kazhdan and Hoppe 2013]

[Schertler et al. 2017]

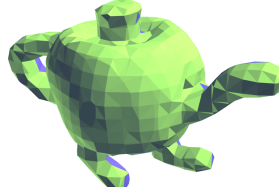
[Fuhmann and Goesele 2014]

*Sparse point cloud with fixed normals*

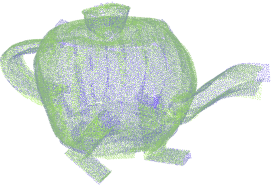
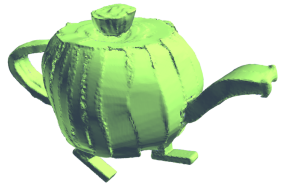
Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 0;
Genus: 6.



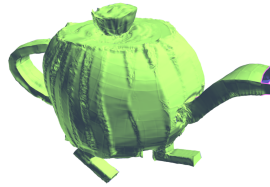
Components: 3; Non-manifold Edges: 13
(0.1%); Non-manifold Vertices: 1; Holes:
Undetermined; Genus: Undetermined.



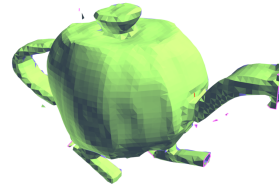
Components: 1; Non-manifold Edges: 6
(0.2%); Non-manifold Vertices: 0; Holes:
Undetermined; Genus: Undetermined.

*Dense point cloud with fixed normals*

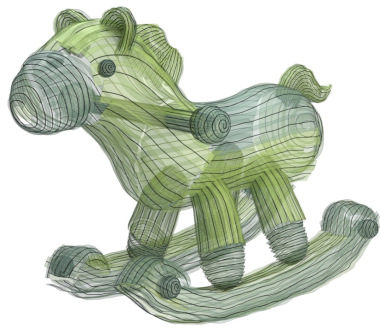
Components: 21; Non-manifold Edges:
0; Non-manifold Vertices: 0; Holes: 0;
Genus: 49.



Components: 2; Non-manifold Edges:
11; (0.0%) Non-manifold Vertices: 5;
Holes: Undetermined; Genus: Undeter-
mined.



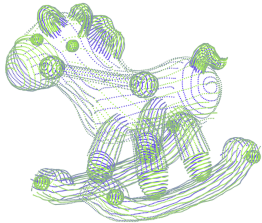
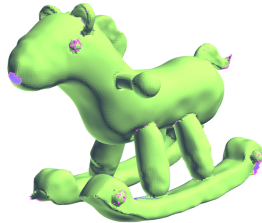
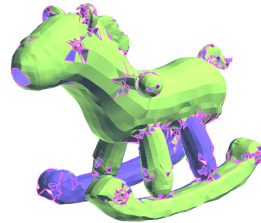
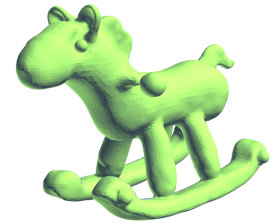
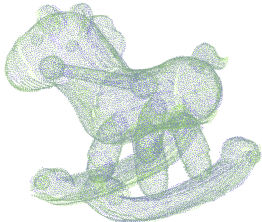
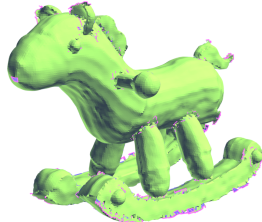
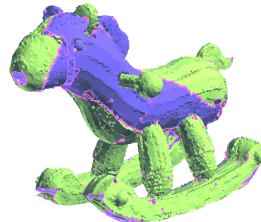
Components: 18; Non-manifold Edges:
11; (0.1%) Non-manifold Vertices: 2;
Holes: Undetermined; Genus: Undeter-
mined.

*Input**Our Result**Input*

[Oeztireli et al. 2009]

[Bernardini et al. 1999]

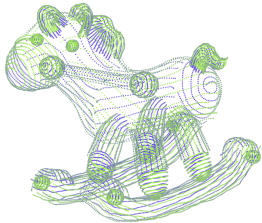
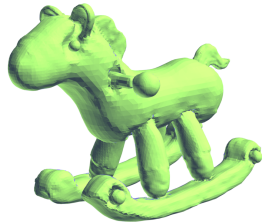
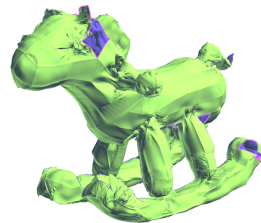
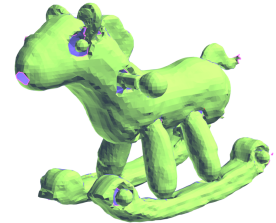
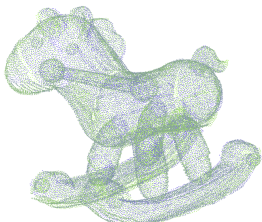
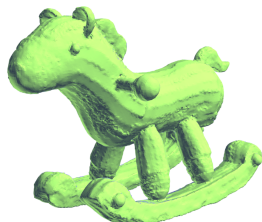
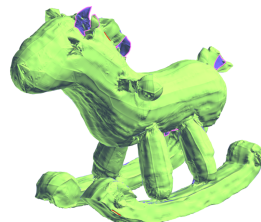
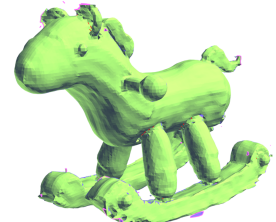
[Kazhdan et al. 2006]

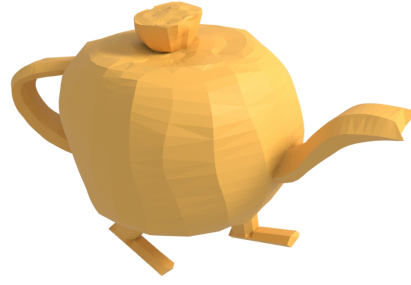
*Sparse point cloud with fixed normals*Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 4; Holes: Undetermined;
Genus: Undetermined.Components: 122; Non-manifold Edges: 0;
Non-manifold Vertices: 643; Holes: Undetermined;
Genus: Undetermined.Components: 4; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 0;
Genus: 3.*Dense point cloud with fixed normals*Components: 1; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 112;
Genus: 218.Components: 10; Non-manifold Edges: 0;
Non-manifold Vertices: 564; Holes: Undetermined;
Genus: Undetermined.Components: 2; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 0;
Genus: 4.*Input*

[Kazhdan and Hoppe 2013]

[Schertler et al. 2017]

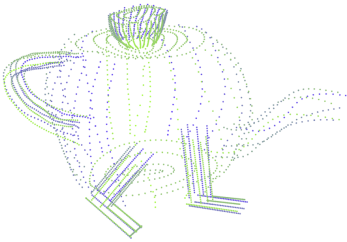
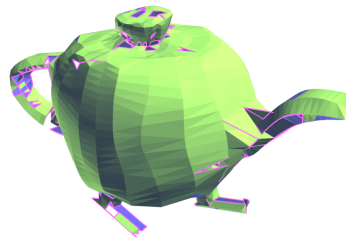
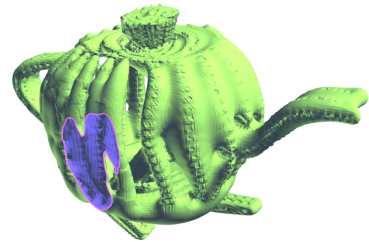
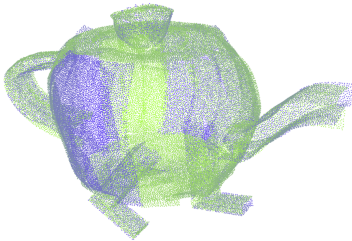
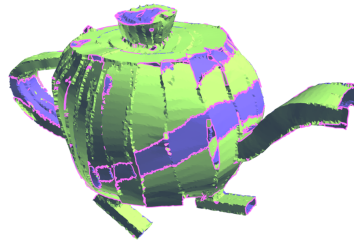
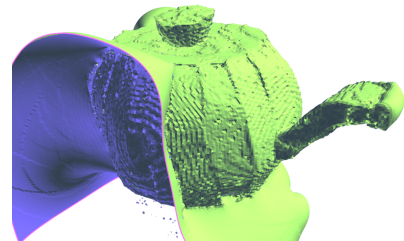
[Fuhrmann and Goesele 2014]

*Sparse point cloud with fixed normals*Components: 8; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 0;
Genus: 26.Components: 2; Non-manifold Edges: 11
(0.0%); Non-manifold Vertices: 7; Holes:
Undetermined; Genus: Undetermined.Components: 22; Non-manifold Edges: 15
(0.0%); Non-manifold Vertices: 0;
Holes: Undetermined; Genus: Undetermined.*Dense point cloud with fixed normals*Components: 33; Non-manifold Edges: 0;
Non-manifold Vertices: 0; Holes: 0;
Genus: 35.Components: 2; Non-manifold Edges: 65;
(0.0%) Non-manifold Vertices: 10;
Holes: Undetermined; Genus: Undetermined.Components: 38; Non-manifold Edges: 143;
(0.1%) Non-manifold Vertices: 2;
Holes: Undetermined; Genus: Undetermined.

*Input**Our Result**Input*

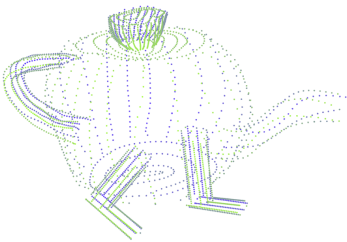
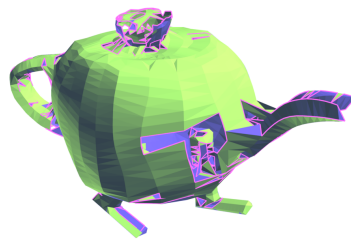
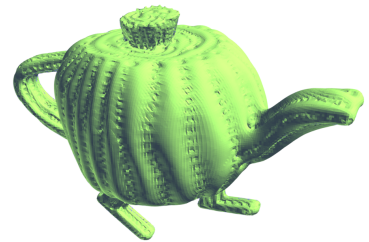
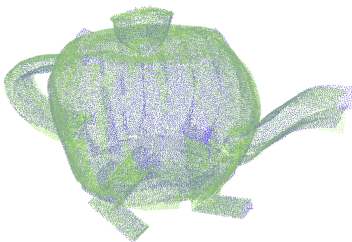
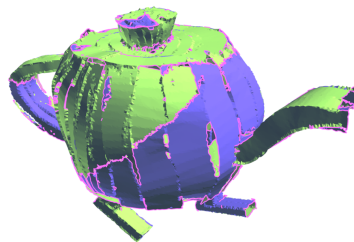
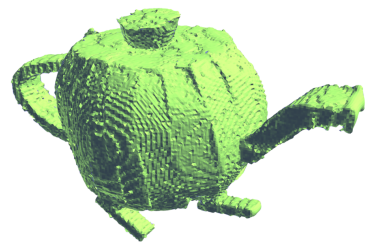
[Bernardini et al. 1999]

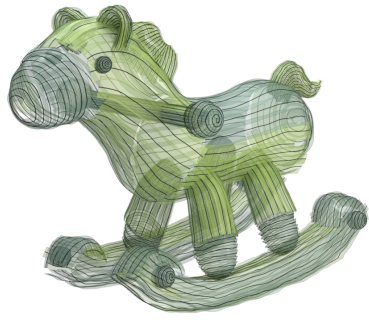
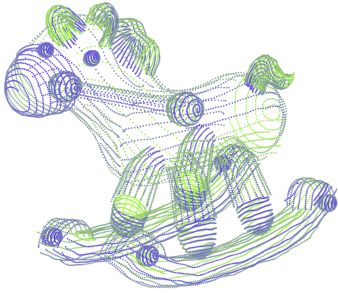
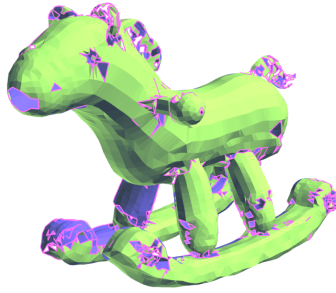
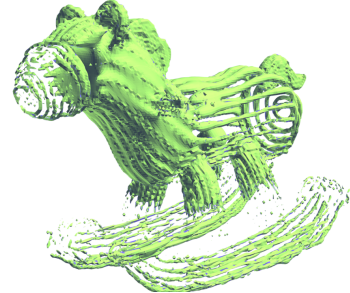
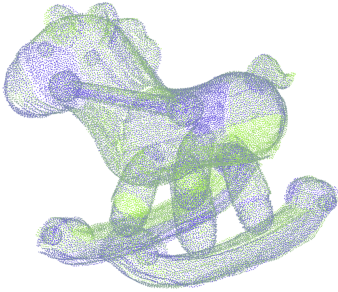
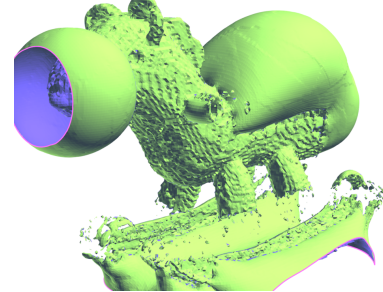
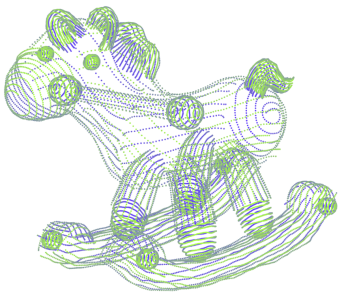
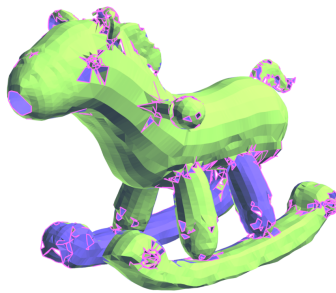
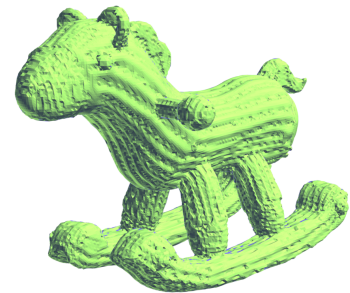
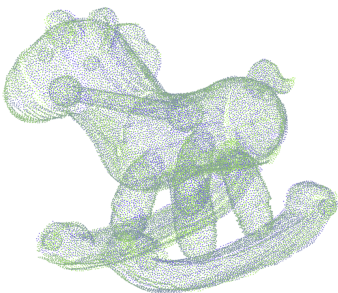
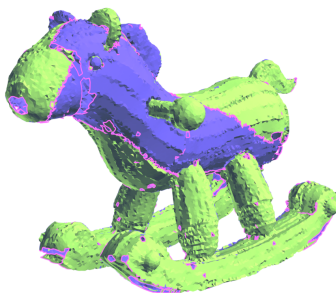
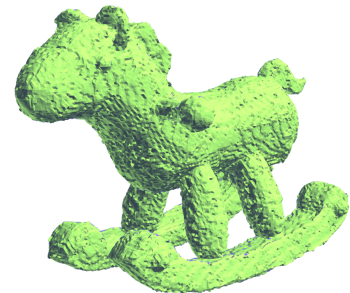
[Barill et al. 2018]

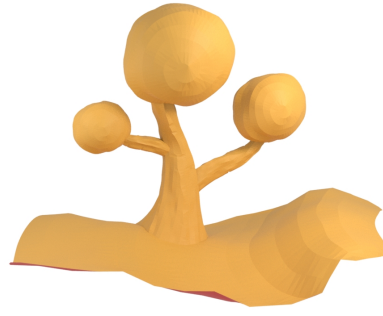
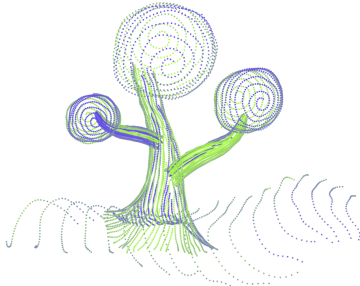
*Sparse point cloud**Components: 22; Holes: 41; Genus: 1.**Components: 20; Holes: 1; Genus: 30.**Dense point cloud**Components: 22; Holes: 179; Genus: 39.**Components: 296; Holes: 1; Genus: 61.**Input*

[Bernardini et al. 1999]

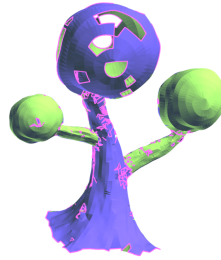
[Barill et al. 2018]

*Sparse point cloud with fixed normals**Components: 8; Holes: 30; Genus: 4.**Components: 150; Holes: 0; Genus: 1.**Dense point cloud with fixed normals**Components: 29; Holes: 167; Genus: 37.**Components: 204; Holes: 0; Genus: 7.*

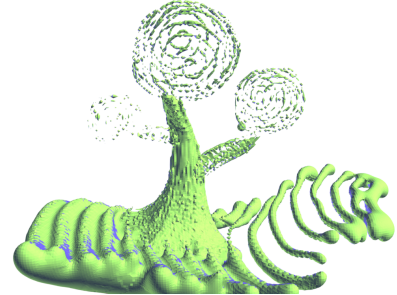
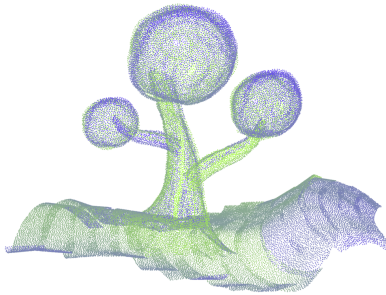
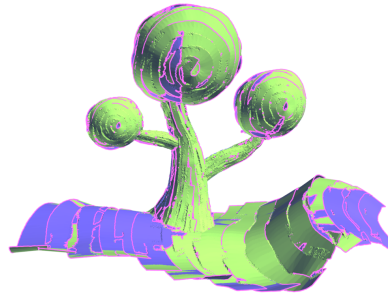
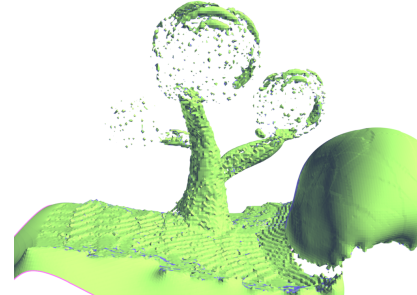
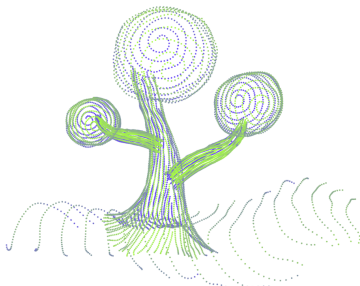
*Input**Our Result**Input**Sparse point cloud**[Bernardini et al. 1999]**Components: 122; Holes: 207; Genus: 2.**[Barill et al. 2018]**Components: 866; Holes: 1; Genus: 49.**Dense point cloud**Components: 13; Holes: 280; Genus: 11.**Components: 784; Holes: 2; Genus: 55.**Input**Sparse point cloud with fixed normals**[Bernardini et al. 1999]**Components: 95; Holes: 185; Genus: 8.**[Barill et al. 2018]**Components: 285; Holes: 0; Genus: 4.**Dense point cloud with fixed normals**Components: 24; Holes: 293; Genus: 22.**Components: 236; Holes: 0; Genus: 8.*

*Input**Our Result**Input**Sparse point cloud*

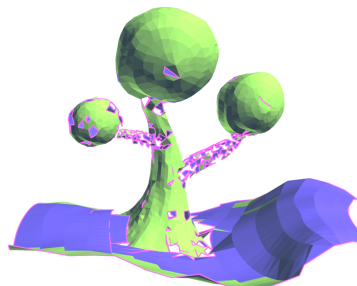
[Bernardini et al. 1999]

*Components: 22; Holes: 98; Genus: 2.*

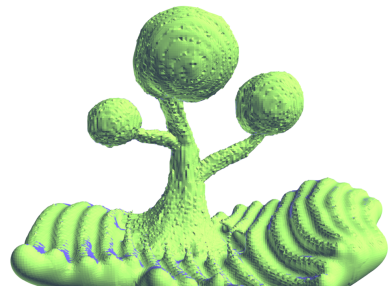
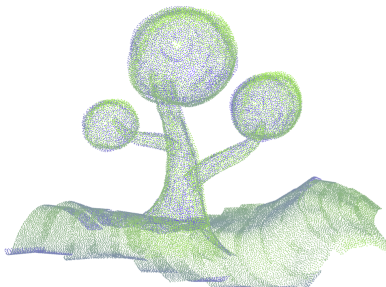
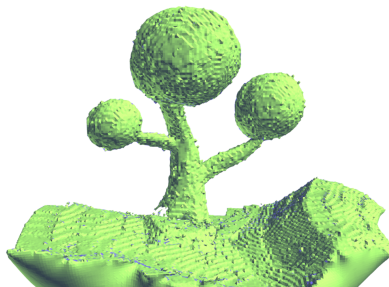
[Barill et al. 2018]

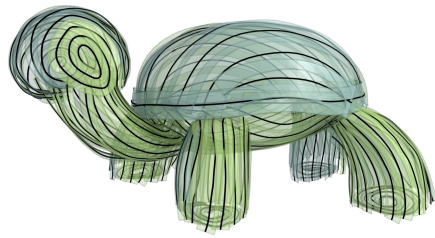
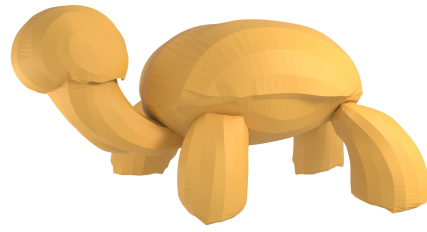
*Components: 733; Holes: 1; Genus: 47.**Dense point cloud**Components: 128; Holes: 719; Genus: 227.**Components: 803; Holes: 2; Genus: 43.**Input**Sparse point cloud with fixed normals*

[Bernardini et al. 1999]

*Components: 69; Holes: 108; Genus: 1.*

[Barill et al. 2018]

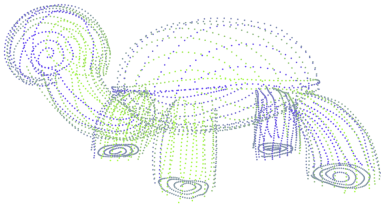
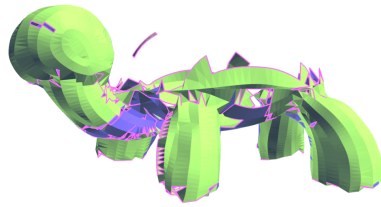
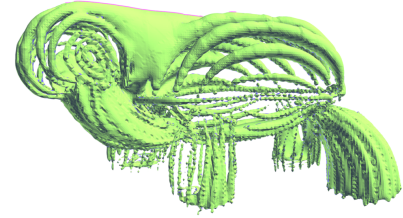
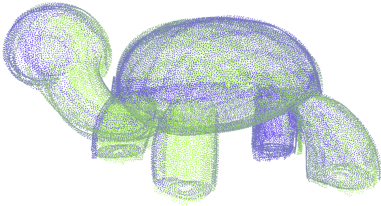
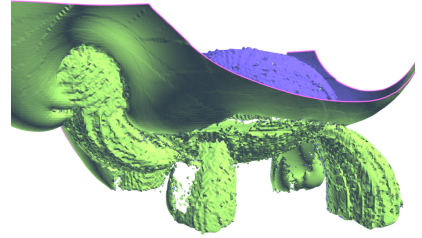
*Components: 136; Holes: 1; Genus: 1.**Dense point cloud with fixed normals**Components: 42; Holes: 201; Genus: 34.**Components: 195; Holes: 1; Genus: 13.*

*Input**Our Result*

Input

[Bernardini et al. 1999]

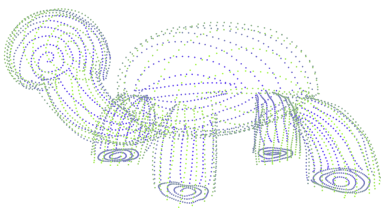
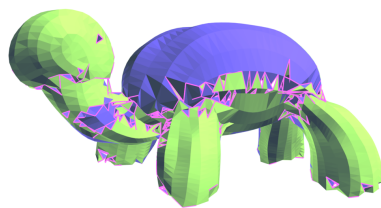
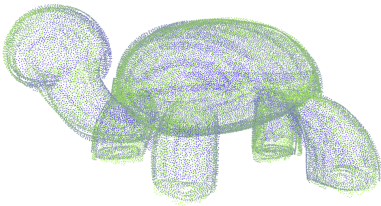
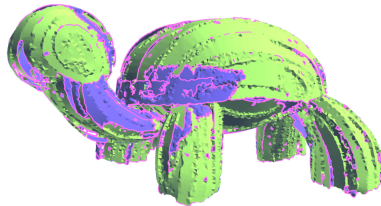
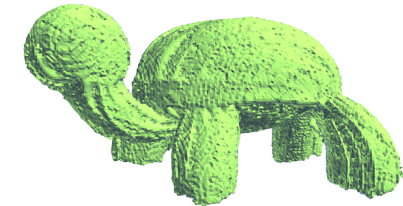
[Barill et al. 2018]

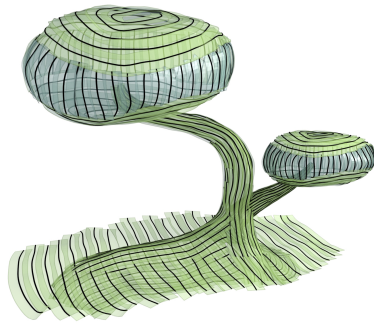
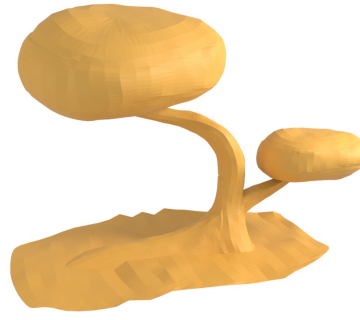
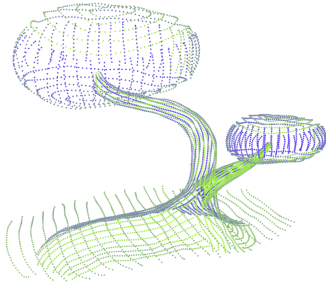
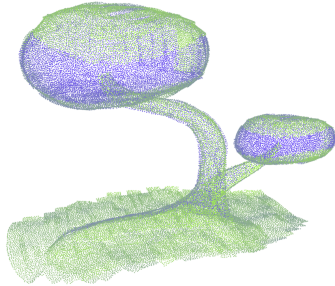
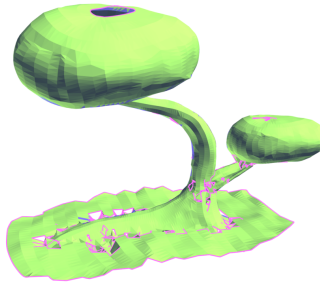
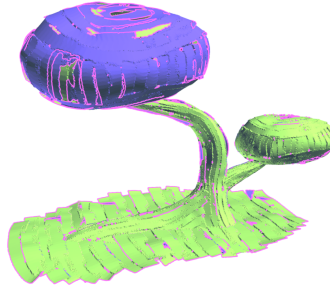
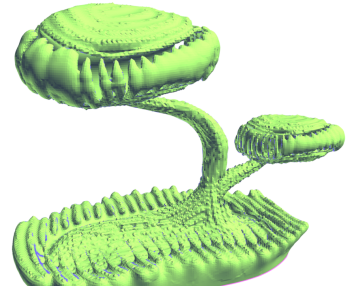
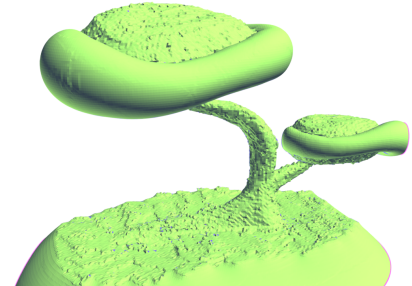
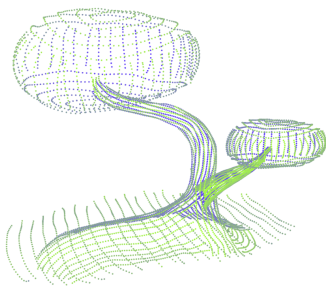
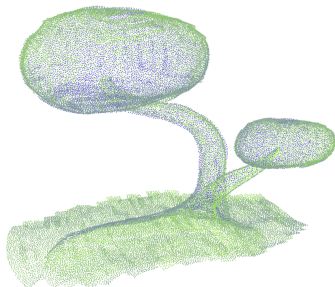
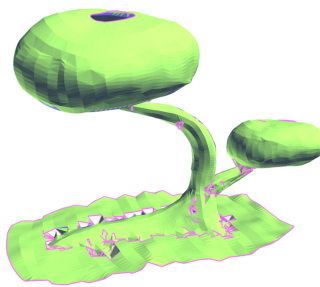
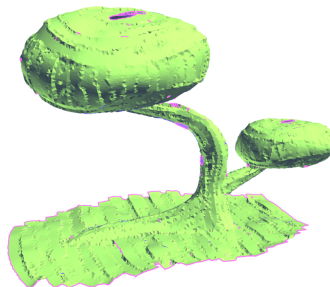
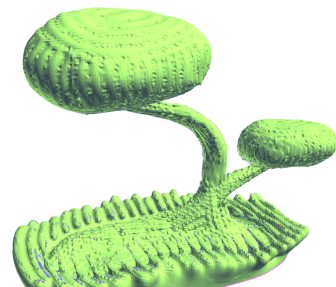
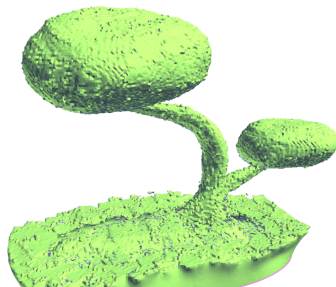
*Sparse point cloud**Components: 23; Holes: 52; Genus: 2.**Components: 326; Holes: 2; Genus: 42.**Dense point cloud**Components: 110; Holes: 2984; Genus: 360.**Components: 537; Holes: 1; Genus: 95.*

Input

[Bernardini et al. 1999]

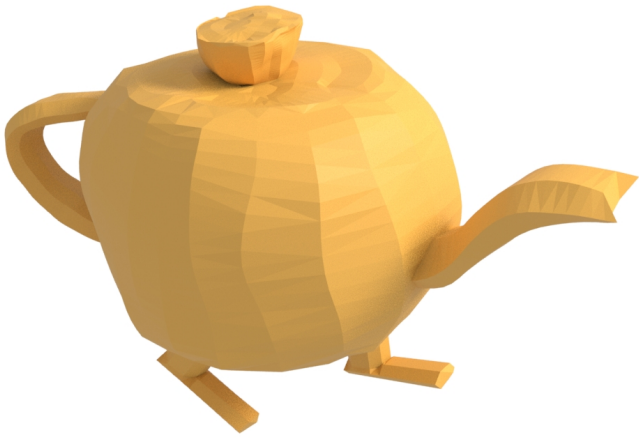
[Barill et al. 2018]

*Sparse point cloud with fixed normals**Components: 17; Holes: 46; Genus: 2.**Components: 148; Holes: 0; Genus: 0.**Dense point cloud with fixed normals**Components: 36; Holes: 422; Genus: 93.**Components: 741; Holes: 0; Genus: 5.*

*Input**Our Result**Input**Sparse point cloud**Dense point cloud**[Bernardini et al. 1999]**Components: 21; Holes: 52; Genus: 4.**Components: 69; Holes: 757; Genus: 152.**[Barill et al. 2018]**Components: 155; Holes: 1; Genus: 35.**Components: 456; Holes: 2; Genus: 112.**Input**Sparse point cloud with fixed normals**Dense point cloud with fixed normals**[Bernardini et al. 1999]**Components: 23; Holes: 53; Genus: 3.**Components: 8; Holes: 130; Genus: 8.**[Barill et al. 2018]**Components: 174; Holes: 1; Genus: 6.**Components: 262; Holes: 1; Genus: 58.*

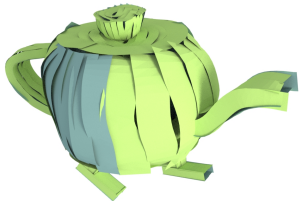


Input



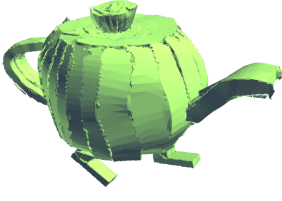
Our Result

Input



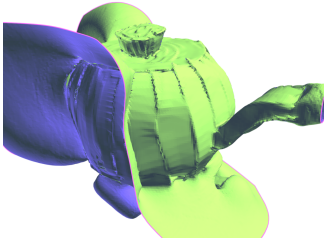
Original ribbons

[Ju 2004]



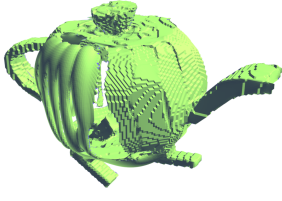
Components: 210; Holes: 0; Genus: 180.

[Shen et al. 2004]



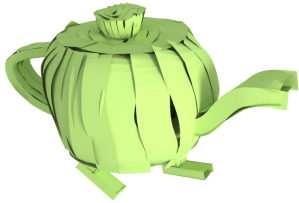
Components: 69; Holes: 2; Genus: 34.

[Barill et al. 2018]



Components: 63; Holes: 0; Genus: 30.

Input



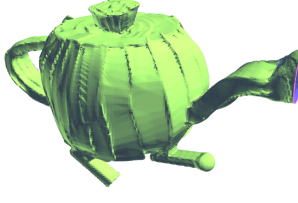
Ribbons with fixed normals

[Ju 2004]



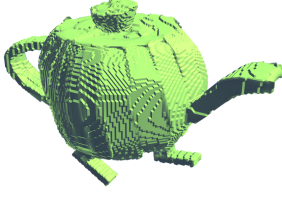
Components: 201; Holes: 0; Genus: 190.

[Shen et al. 2004]



Components: 76; Holes: 1; Genus: 21.

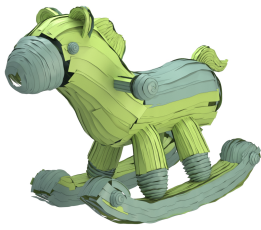
[Barill et al. 2018]



Components: 41; Holes: 0; Genus: 7.

*Input**Our Result*

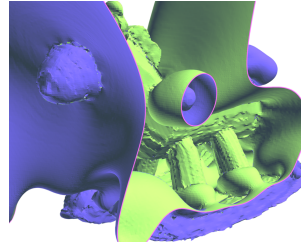
Input

*Original ribbons*

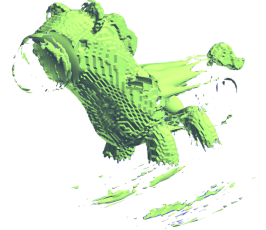
[Ju 2004]

*Components: 194; Holes: 0; Genus: 278.*

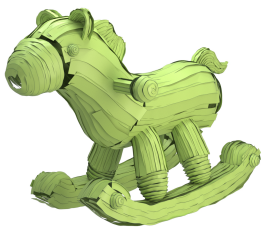
[Shen et al. 2004]

*Components: 148; Holes: 3; Genus: 317.*

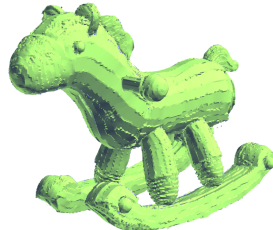
[Barill et al. 2018]

*Components: 303; Holes: 0; Genus: 31.*

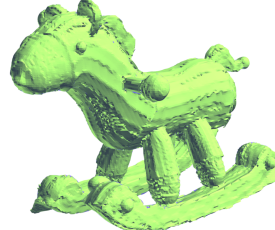
Input

*Ribbons with fixed normals*

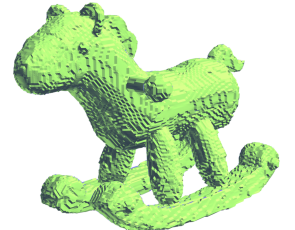
[Ju 2004]

*Components: 260; Holes: 0; Genus: 248.*

[Shen et al. 2004]

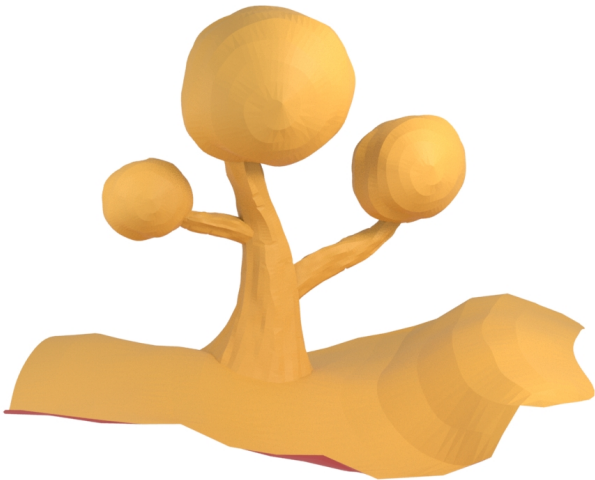
*Components: 221; Holes: 0; Genus: 157.*

[Barill et al. 2018]

*Components: 37; Holes: 0; Genus: 17.*

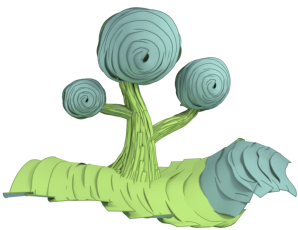


Input



Our Result

Input



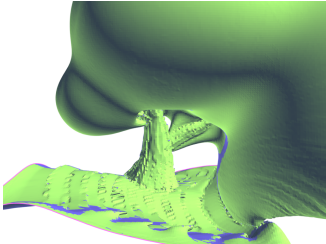
Original ribbons

[Ju 2004]



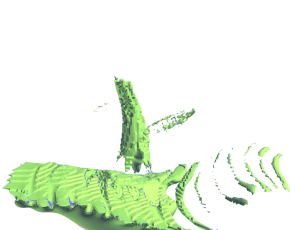
Components: 552; Holes: 0; Genus: 478.

[Shen et al. 2004]



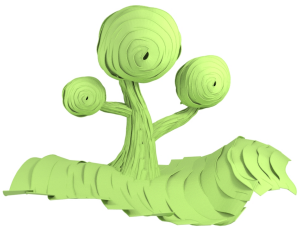
Components: 197; Holes: 2; Genus: 238.

[Barill et al. 2018]



Components: 133; Holes: 1; Genus: 34.

Input



Ribbons with fixed normals

[Ju 2004]



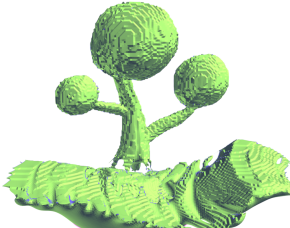
Components: 552; Holes: 0; Genus: 478.

[Shen et al. 2004]

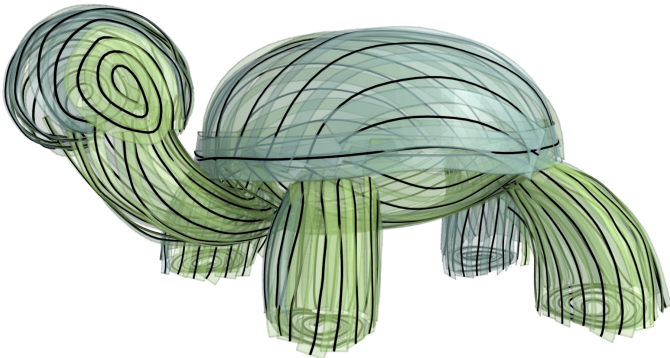


Components: 171; Holes: 1; Genus: 144.

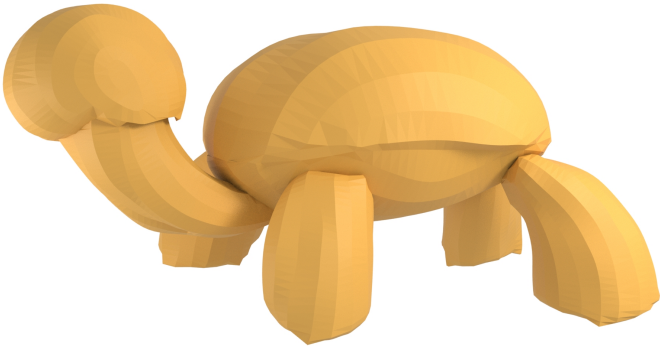
[Barill et al. 2018]



Components: 43; Holes: 1; Genus: 8.



Input



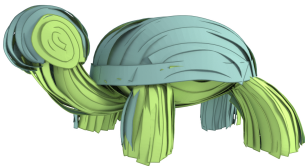
Our Result

Input

[Ju 2004]

[Shen et al. 2004]

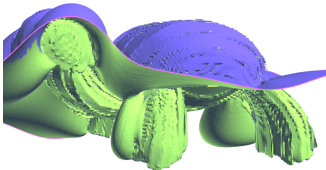
[Barill et al. 2018]



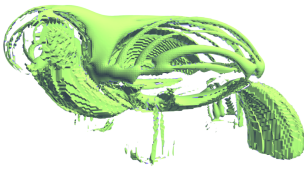
Original ribbons



Components: 668; Holes: 0; Genus: 1059.



Components: 403; Holes: 1; Genus: 512.



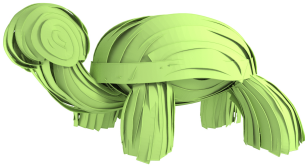
Components: 118; Holes: 0; Genus: 38.

Input

[Ju 2004]

[Shen et al. 2004]

[Barill et al. 2018]



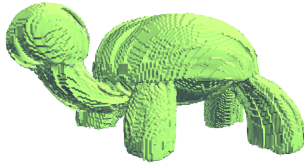
Ribbons with fixed normals



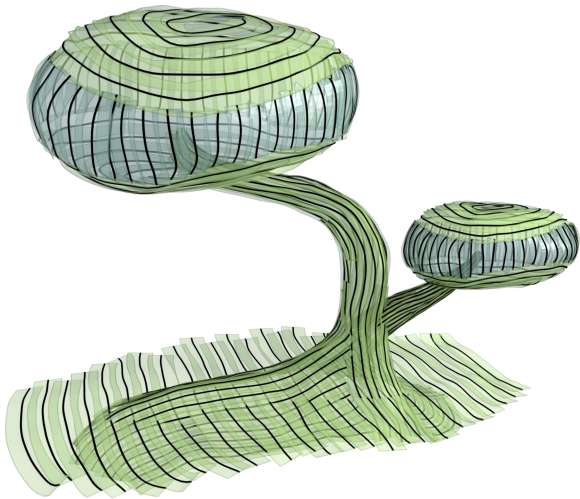
Components: 668; Holes: 0; Genus: 1059.



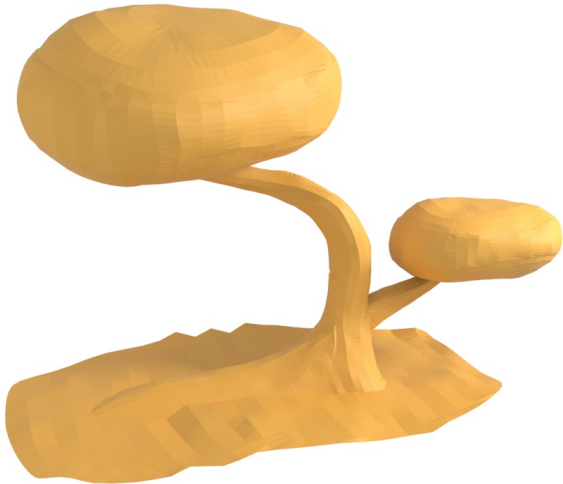
Components: 416; Holes: 0; Genus: 357.



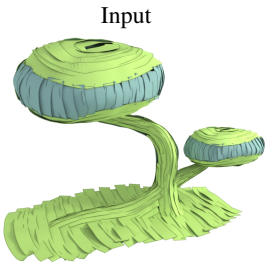
Components: 64; Holes: 0; Genus: 5.



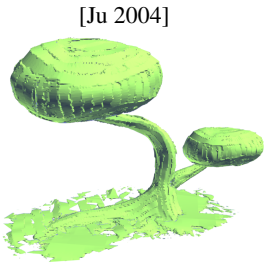
Input



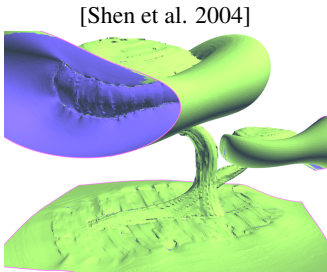
Our Result



Original ribbons



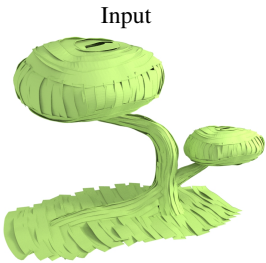
Components: 300; Holes: 0; Genus: 257.



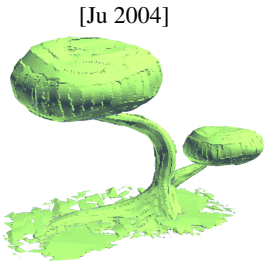
Components: 95; Holes: 3; Genus: 130.



Components: 152; Holes: 1; Genus: 34.



Ribbons with fixed normals



Components: 300; Holes: 0; Genus: 257.



Components: 93; Holes: 1; Genus: 65.



Components: 86; Holes: 1; Genus: 9.