

DigitalCircularityToolkit

Version 0.1

Keith JL
February 25, 2024

Contents

I	Introduction	3
1	Digital Circularity	3
2	DigitalCircularityToolkit	3
2.1	Minimum working example	3
II	Workflows	3
III	Component Reference	3
3	Objects	3
3.1	Object	3
3.2	LinearObject	4
3.3	PlanarObject	4
3.4	BoxObject	6
3.5	SphericalObject	6
3.6	Utilities	6
3.6.1	ObjectProperties	6
3.6.2	OverridePCA	6
4	Sets	6
4.1	LinearSet	6
4.2	PlanarSet	6
4.3	BoxSet	6
4.4	SphereSet	6
5	Characterization	6
5.1	FeatureVector	6
5.2	LineScore	6
5.3	PlaneScore	6
5.4	BoxScore	6
5.5	SphereScore	6
5.6	RadialSignature	6
5.7	HarmonicAnalysisReal	6
5.8	HarmonicAnalysisComplex	6
6	Distance	6

6.1	EuclideanDistance	6
6.2	AsymmEuclideanDistance	6
7	Matching	6
7.1	Hungarian	6
7.2	Utilities	6
7.2.1	MatchLines	6
7.2.2	AlignToObject	6
8	Utilities	6
8.1	Knoll	6
8.2	AlignToPlane	6
8.3	LineToVector	6
8.4	Normalize	6
8.5	PlanarHull	6
8.6	PlanarOutline	6
8.7	RotatePCA	6
8.8	ToPointCloud	6

Part I

Introduction

1 Digital Circularity

2 DigitalCircularityToolkit

2.1 Minimum working example

Part II

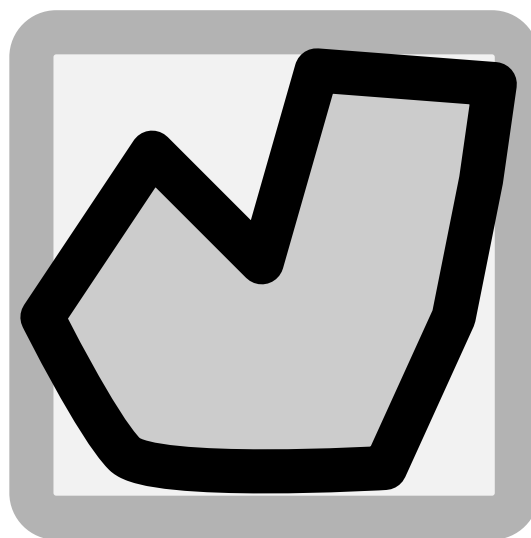
Workflows

Part III

Component Reference

3 Objects

3.1 Object



3.2 LinearObject



3.3 PlanarObject







3.4 BoxObject

3.5 SphericalObject

3.6 Utilities

3.6.1 ObjectProperties

3.6.2 OverridePCA

4 Sets

4.1 LinearSet

4.2 PlanarSet

4.3 BoxSet

4.4 SphereSet

5 Characterization

