

Polygon Functions for Octave & MATLAB

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A mex interface to the Clipper library by Angus Johnson
<http://www.angusj.com/delphi/clipper.php>, and mex
functions for fast calculation of polygon orientation and
for testing if a point is inside a polygon.

Polygon clipping:

```
[pc, hc] = polybool(pa, pb, 'op', ha, hb, ug);
```

where 'op' can be 'and' (intersection), 'or' (union), 'notb' or 'diff'
(difference), and 'xor'. pa, pb, and pc are cell arrays with nx2
matrices containing polygon vertices (one vertex per row). ha, hb, hc
are logical arrays with hole flags. If ha(k) > 0, then pa{k} is an
interior polygon belonging to a polygon with one or more holes. The
clipping operation is performed on an integer grid. The polygon data
are multiplied with the scale factor 'ug' prior to the clipping
operation and the resulting polygons are scaled by 1/ug.

Polygon orientation:

```
cw = iscw(pa);
```

Make polygons oriented clockwise:

```
P = polycw(pa);
```

where P and pa are cell arrays of polygons.

Check if points are inside a polygon:

```
inp = isinpolygon(polygon, xy);
```

where 'polygon' is a n x 2 array of polygon vertices and 'xy' an n x 2 array
of points. 'inp' is a logical array.

Compilation:

The mex functions must be compiled before they can be used.

On MATLAB or on Octave/Windows type the command

```
makemex
```

at the MATLAB prompt (the polybool directory must be the current
directory). For Octave on Linux compile the mex functions by
running

```
./makemex-octave
```

at a shell prompt.

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