

# Shape Interrogation for CAD/CAM

**Note:** These codes were tested on the 32-bit Linux boxes with GNU's C/C++ (gcc/g++)

## mdist-p2c.c

Compute the minimum distance from a point to a NURBS curve using the IPP solver.

Do:

```
prompt> make mdist-p2c
prompt> mdist-p2c -f point_file_name -t curve_file_name -e
root_tolerance_for_IPP_solver [-o output_file_name]
```

Example:

```
prompt> mdist-p2c -f ex.7.1.pt -t ex.7.1.curv -e 1.e-8 -o ex.7.1.out
```

Note: For the file format of the input curve, see [../README.pdf](http://../README.pdf)

A point input file contains a point in (x,y,z).

## mdist-p2s.c

Compute the minimum distance from a point to a NURBS surface using the IPP solver.

Do:

```
prompt> make mdist-p2s
prompt> mdist-p2s -f point_file_name -t surface_file_name -e
root_tolerance_for_IPP_solver [-o output_file_name]
```

Example:

```
prompt> mdist-p2s -f ex.7.2.pt -t ex.7.2.surf -e 1.e-8 -o ex.7.2.out
```

Note: For the file format of the input surface, see [../README.pdf](http://../README.pdf)

A point input file contains a point in (x,y,z).

## mdist-c2c.c

Compute the minimum distance from a NURBS curve to a NURBS curve using the IPP solver.

Do:

```
prompt> make mdist-c2c
```

```
prompt> mdist-c2c -f curve1_file_name -t curve2_file_name -e  
root_tolerance_for_IPP_solver [-o output_file_name]
```

Example:

```
prompt> mdist-c2c -f ex.7.3.a.curv -t ex.7.3.b.curv -e 1.e-4 -o ex.7.3.out
```

Note: For the file format of the input curves, see [../README.pdf](http://../README.pdf)

## **mdist-c2s.c**

Compute the minimum distance from a NURBS curve to a NURBS surface using the IPP solver.

Do:

```
prompt> make mdist-c2s  
prompt> mdist-c2s -f curve_file_name -t surface_file_name -e  
root_tolerance_for_IPP_solver [-o output_file_name]
```

Example:

```
prompt> mdist-c2s -f ex.7.4.curv -t ex.7.4.surf -e 1.e-8 -o ex.7.4.out
```

Note: For the file format of the input curve and surface, see [../README.pdf](http://../README.pdf)

## **mdist-s2s.c**

Compute the minimum distance from a NURBS surface to a NURBS surface using the IPP solver.

Do:

```
prompt> make mdist-s2s  
prompt> mdist-s2s -f surface1_file_name -t surface2_file_name -e  
root_tolerance_for_IPP_solver [-o output_file_name]
```

Example:

```
prompt> mdist-s2s -f ex.7.5.a.surf -t ex.7.5.b.surf -e 1.e-8 -o ex.7.5.out
```

Note: For the file format of the input surfaces, see [../README.pdf](http://../README.pdf)