**Model\_Search**

**Input:** Pairs of Polylines

**Output:** Joint Parameters (IndexPairs, Geometry data (lines, polylines, meshes))

**Method:** CollisionDetectionOBB

1. **Find Collisions between Elements** using
2. Oriented-Bounding-Boxes (OBB)
   1. Perform **RTree** search using **AABB**
   2. Check **Collision** between **OBB**

**Input:** OBB parameters: a) Position (3 x double), b) X and Y Axes (6 x double), c) Half-size of the Box (3 x double)

**Output:** List of index pairs: a) ID0-ID1 (2 x Int)

**Method:** CollisionDetectionPlanarPolygons

1. Axis-Axis
   1. Transfer Lines
2. TopPolygons-TopPolygons
   1. Transfer Polygons (Points with ids)
   2. Compute OBB following longest edge direction and plane Z-Axis
   3. Check co-planarity
   4. Convert polygons to Clipper library and perform intersection
   5. Plane polygon intersection if not top-top
3. TopPolygons-TopPolygons (Cross-lap)
   1. Transfer Top Polygons
4. Mesh-Mesh
   1. Transfer Meshes

**Tile**

**Input:** Pairs of male and female Polylines, and their properties: boolean\_type,

**Output:** Oriented geometry to connection area

**Annen**

**Method:** NURBS Subdivision into Quads:

1. Step 1
2. Step 2

**Method:** Plate Geometry Generation:

1. Step 1
2. Step 2