1. Border simplify.
2. Set an expected distance d1 for each two adjacent points. Start with the biggest curvature point, each patch no longer than d1, choose the maximum curvature point.
3. Check if this point satisfies the envelope condition or far enough. If violate any of these two conditions, find a point not violate. (also record the original point, because we may need it in (3)).
4. Check if any interior point is outside the border(delaunay). If so, add a point in the related region. This point can be a local maximum curvature point, or a mid point of the corresponding region.