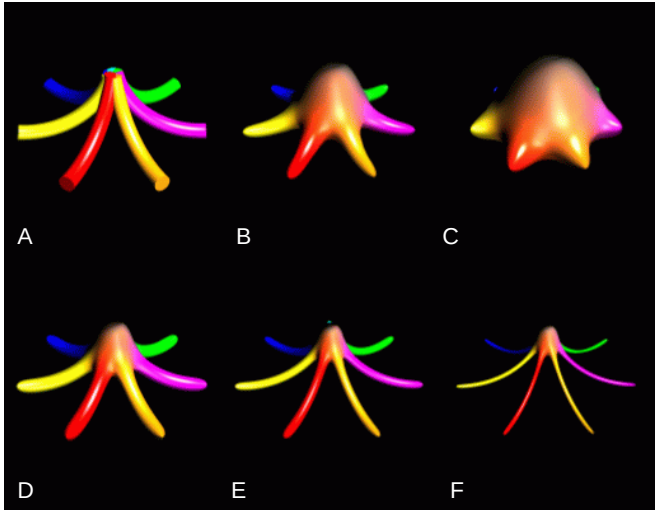

Figure D.1: Family of convolved starfish. Notice how the colors of the tentacles are blended along the surface.

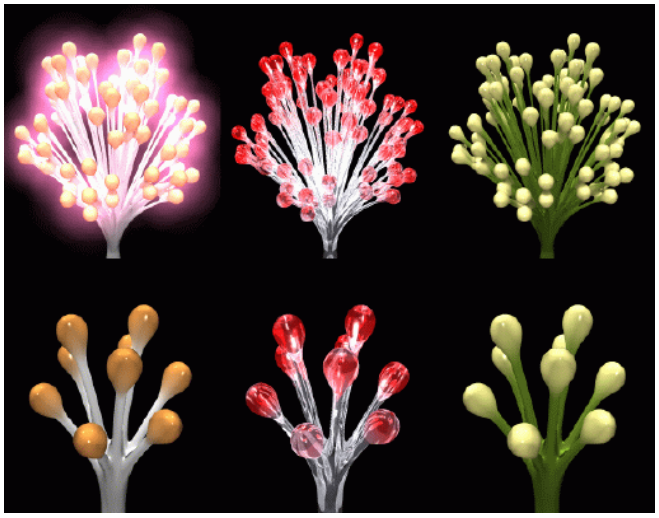

Figure D.2: Modified implicit sphereflakes: Gaussian point sources (tops) blend with Cauchy arcs (stems).

Figure D.3: Blends between primitives of different types: arcs and lines (left); triangle with triangle (right); arcs, lines and planes (bottom). The plane primitive is slightly rotated.

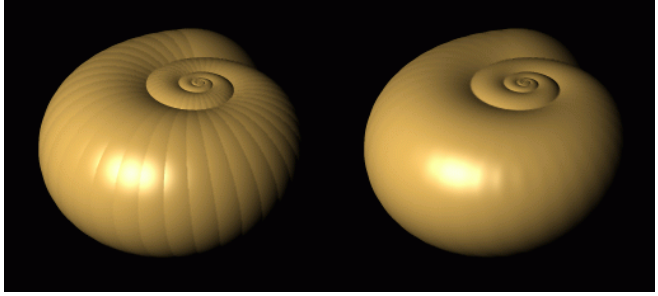

Figure D.4: Shell I. The offset surface and the convolved surface are very similar. This dataset served as a base for Shells II and III. 361 elements.

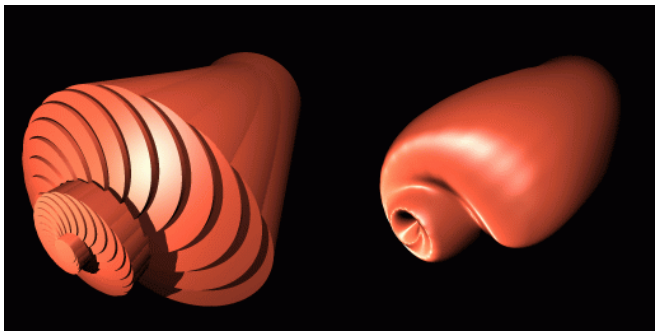

Figure D.5: Shell II. The offset surface of this shell is pictured as a union of cylinders to emphasize the spiral structure better. 42 elements.

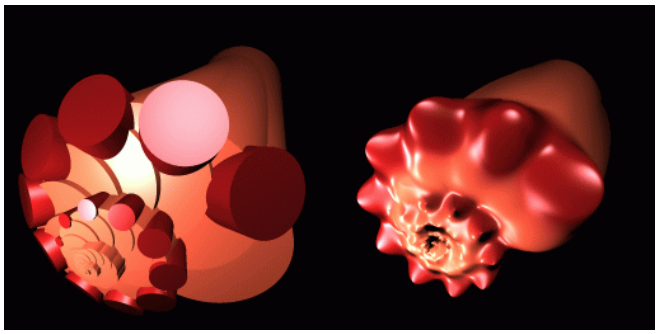

Figure D.6: Shell III. The orange base (55 segments) blends with the spiral row of red horns (15 segments) yielding a smooth shape of a new seashell.

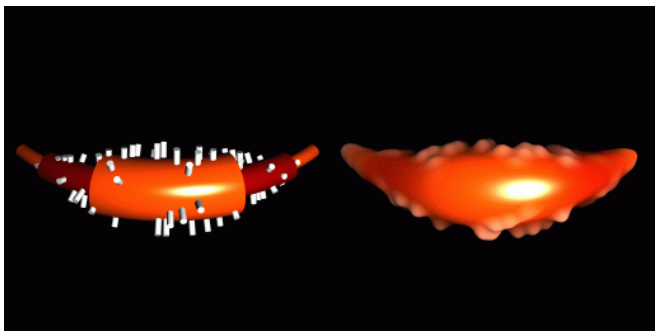

Figure D.7: Spindle Cowrie. This very simple model is based on a croissant-like combination of 3 arcs. Additional 100 spikes make the surface rough.

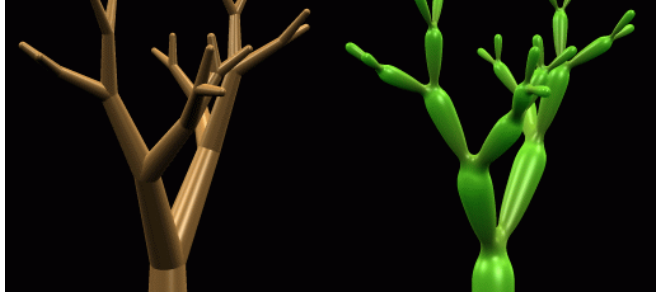

Figure D.8: Seaweed. The offset surface is made of spheres and cones which suggested applying linear profiling functions in the convolution surface.

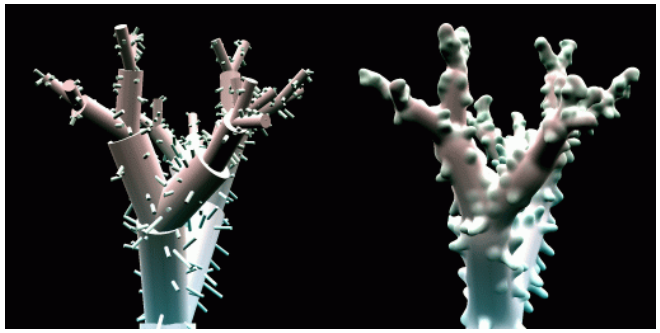

Figure D.9: Corals. This model is a combination of a seaweed and 512 spikes that completely change the appearance of the object.

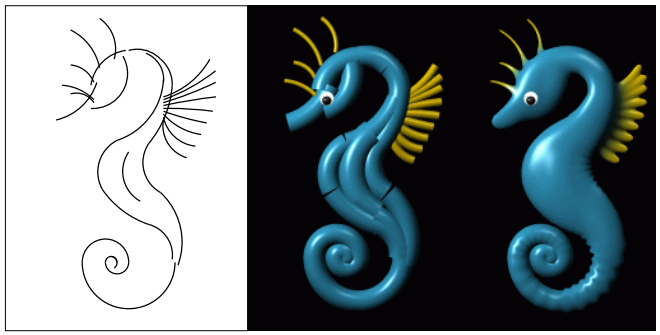

Figure D.10: Seahorse. The hand drawing, the offset surface and the convolution surface. Note the wrinkles in the back and the tail. 45 elements.

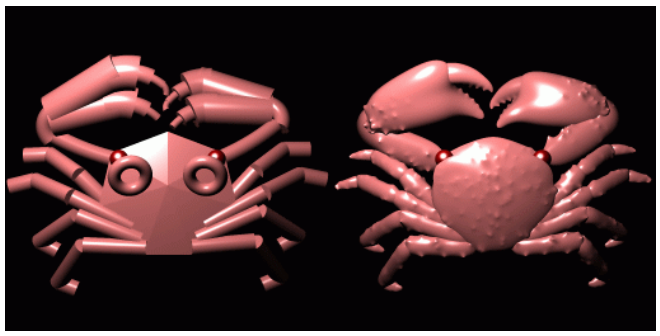

Figure D.11: Crab. The draft (left) is made of 7 polygons, 26 arcs, 28 cylinders and 2 spheres. The convolved version has 608 additional spikes.

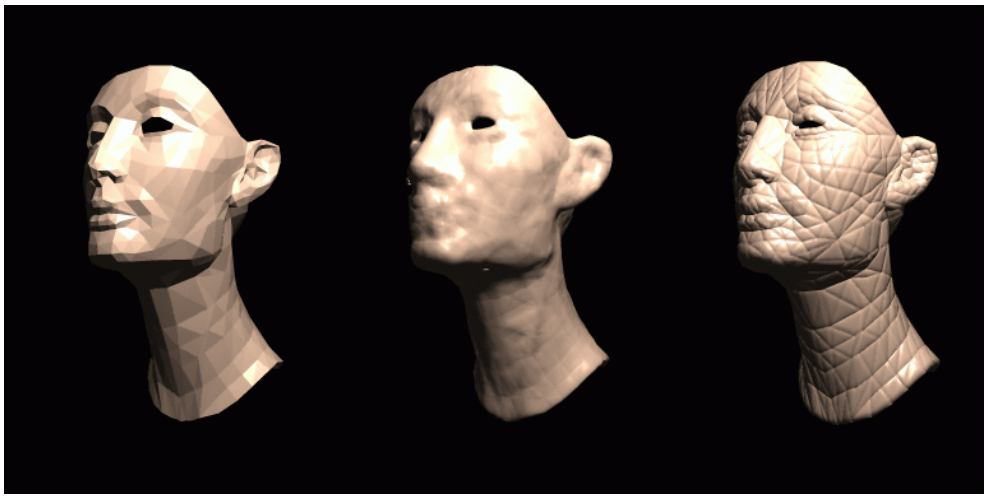

Figure D.12: Nefertiti, before (left) and after (middle, right) convolution. Restricted blending near the edges creates the wrinkles (right). Total 1,242 implicit triangles.

Figure D.13: Aging Yoda. Phong-shaded polygonal mesh (top) gives Yoda an unnaturally juvenile look. Convolution surfaces (middle and bottom) add details that indicate more realistic ages. Total 3,422 implicit triangles.

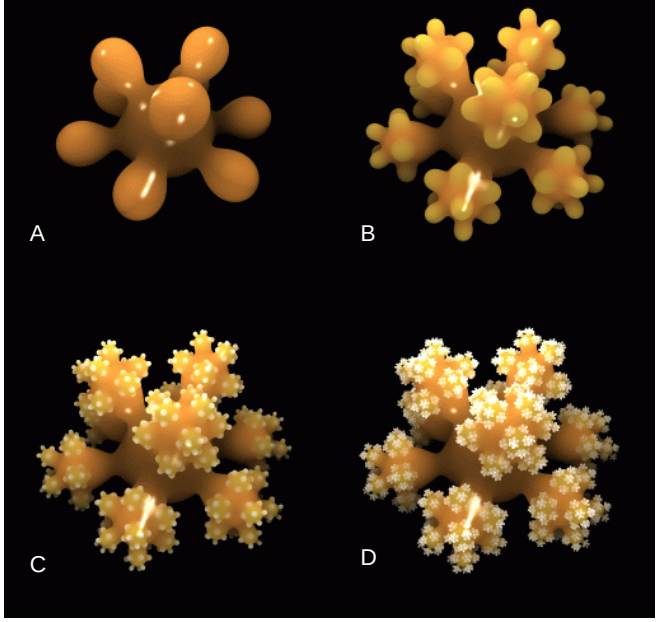

Figure D.14: Implicit sphereflakes made with 10, 91, 820 and 7381 Gaussian density functions. The smaller objects have lighter surface colors for better contrast.

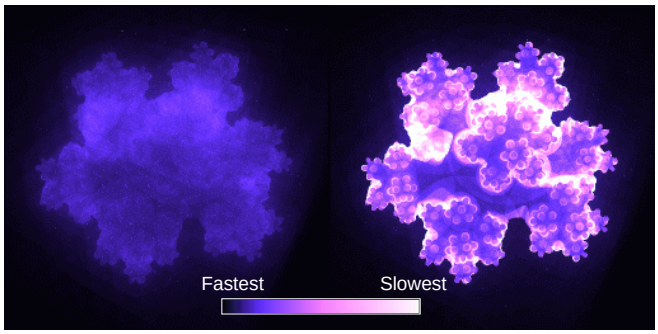

Figure D.15: Time-profiling charts for our rendering algorithm (left) and the LG-algorithm (right). The left image shows almost uniform time complexity over the scene. The right image shows that the rendering was much slower at the silhouette edges, which agrees with the results reported by Kalra and Barr.

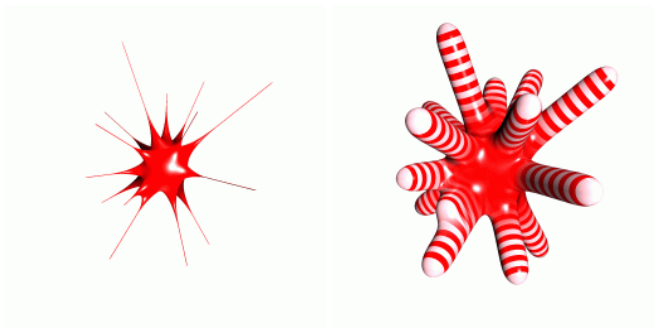

Figure D.16: Two sea-urchins. Left: thin objects are not a problem for the rendering algorithm. Right: UV-mapping, cross-dissolved over blending regions.

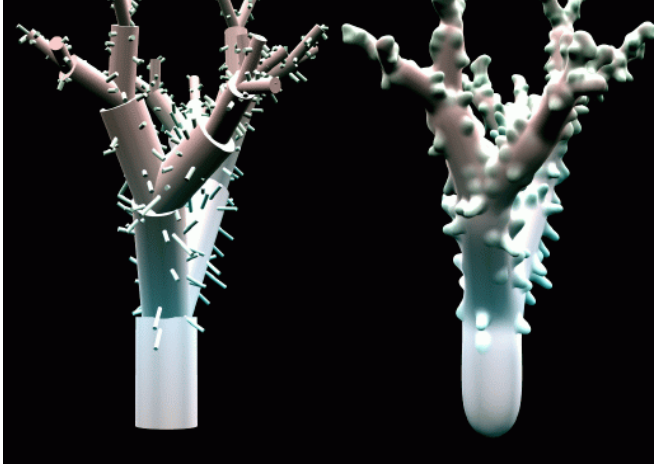

Figure D.17: Coral tree. This model served as a test-bed for various speed optimizations.

Figure D.18: Large Hermite Crab.

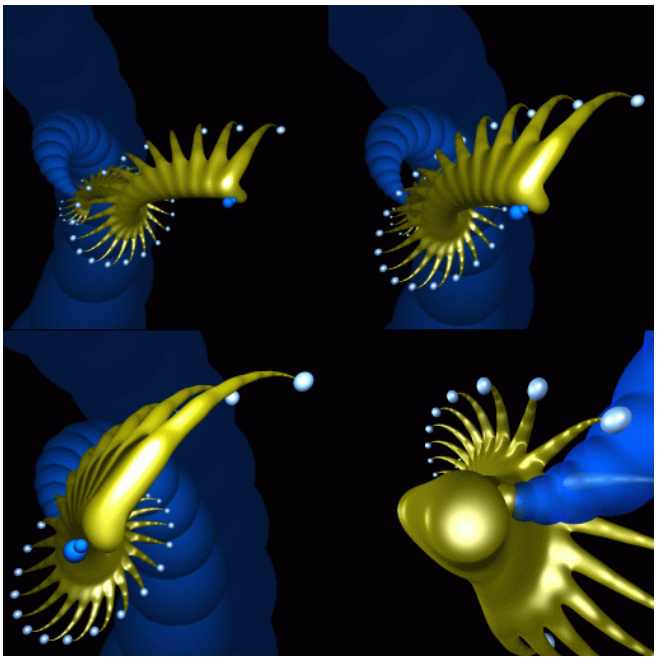

Figure D.19: Evolution of *Spinal Starecase*, the 33-legged 333-segmented creature.