The Implicit Modelling group has been working for some time on better methods for building and animating models of real world objects for a variety of applications from the design of engineering objects to the animation of cartoon like creatures. We have developed methods for combining techniques such as automatic blending, warping, Constructive Solid Geometry (CSG) and texture mapping. We have also designed new data structures (the BlobTree) for managing the complexity of models which combine these techniques. (See Figures). Our latest work investigates new ways of making 3D objects from 2D profiles, geological simulation of stalagtites and stalacmites and new texture generation techniques based on field interactions.

Applications of these techniques include product design, animation, and simulating possible scenarios. The images shown represent the BlobTree structure, a warped texture mapped blend object, as well as familiar objects such as the railway engine and the piano. These techniques also have applications to natural shapes such as the sea shell.